PHILIPS 42PF9945

MODEL

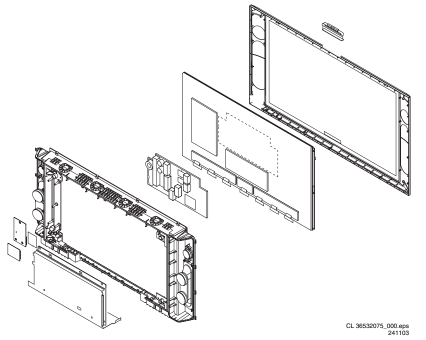
SERVICE MANUAL

Colour Television **Chassis**

FTP1.1E

AA

Service
Service
Service



ServiceManual

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Published by WO 0371 Service PaCE Printed in The Netherlands Subject to modification EN 3122 785 14370

PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:
1. Technical Specifications
2. Connections
3. Chassis Overview

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

1.1 Technical Specifications

1.1.1 Vision

Display type	:	DV-Plasma, 16:9
Screen size	:	42-inch (107 cm)
Resolution (HxV)	:	852(x3) x 480 pixels
Contrast ratio	:	1000:1
Light output	:	650 cd/m^2
Viewing angle (HxV)	:	160x160 deg.
Tuning system	:	PLL
Colour systems	:	PAL B/G, D/K, I
	:	SECAM B/G, D/K, L, L1
Video playback	:	NTSC 4.43/3.58
Channel selections	:	100 presets
	:	UVSH
Aerial input	:	75 ohm, IEC-type
Dimensions (WxHxD) in mm	:	1074x644x135

1.1.2 Sound

Sound systems	:	AV Stereo,
	:	BI NICAM BG - 2CS BG,
	:	BI NICAM BG/D - 2CS BG,
	:	BI NICAM BG/K - 2CS BG
Maximum power	:	2 x 15 W_rms (int.)

1.1.3 Miscellaneous

Mains voltage	:	198 - 264 V_ac
Mains frequency	:	50 / 60 Hz
Ambient temperature	:	+5 to +40 deg. C
Maximum humidity	:	90 % R.H.
Power consumption	:	
- Normal operation	:	≈ 340 W
- Standby	:	< 3 W

1.2 Connections

1.2.1 Rear/Bottom Connections

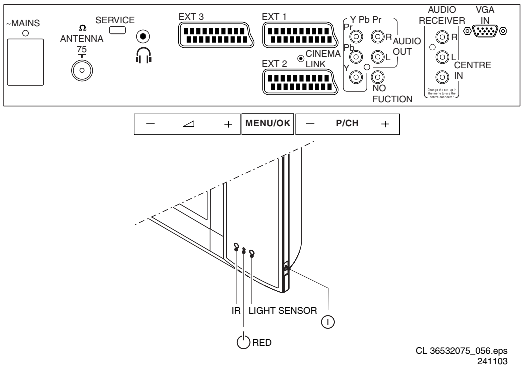

~MAINS
SERVICE
ANTENNA
75
EXT 3
EXT 1
EXT 2
CINEMA LINK
Y Pb Pr
Pr
Pb
Y
R
L
AUDIO OUT
NO FUCTION
AUDIO RECEIVER
R
L
CENTRE IN
Change the set-up in the menu to use the centre connector.
VGA IN
MENU/OK
P/CH
IR
LIGHT SENSOR
RED
CL 36532075_056.eps
241103

Figure 1-1 Rear/Bottom connections

1.2.2 Audio receiver (if present)

Audio - In (Cinch)

C - Audio - Centre		→◎

Audio - Out (Cinch)

R - Audio - R	0.5 V_rms / 1 kohm	◎→
L - Audio - L	0.5 V_rms / 1 kohm	◎→

Audio - Out (Cinch)

R - Audio - R	0.5 V_rms / 1 kohm	◎→
L - Audio - L	0.5 V_rms / 1 kohm	◎→

1.2.3 VGA

VGA (Input)

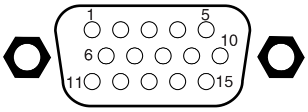


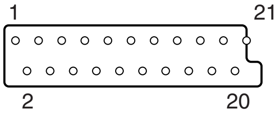
Figure 1-2 VGA Connector

1	- Red	0.7 V_pp / 75 ohm	→○
2	- Green	0.7 V_pp / 75 ohm	→○
3	- Blue	0.7 V_pp / 75 ohm	→○
4	-	Ground	⏚
5	-	Ground	⏚
6	-	Ground	⏚
7	-	Ground	⏚
8	-	Ground	⏚
9	- 5V_DC_OUT	+5 V_dc	○→
10	-	Ground	⏚
11	-	Ground	⏚
12	- DDC_SDA		→○
13	- H-sync	0 - 5 V	→○
14	- V-sync	0 - 5 V	→○
15	- DDC_SCL		→○

Cinch (Input)

- Audio - L	0.5 V_rms / 10 kohm	→◎
- Audio - R	0.5 V_rms / 10 kohm	→◎
- Y	0.7 V_pp / 75 ohm	→◎
- Pb	0.35 V_pp / 75 ohm	→◎
- Pr	0.35 V_pp / 75 ohm	→◎

1.2.4 SCARTs



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171199

Figure 1-3 SCART connector

Table 1-1 SCARTs overview

Pin	Signal	Signal level	Type	EXT1	EXT2	EXT3
1	Audio - R	0.5 V_rms / 1 kohm	○→	x	x	Gnd
2	Audio - R	0.5 V_rms / 10 kohm	→○	x	x	x
3	Audio - L	0.5 V_rms / 1 kohm	○→	x	x	Gnd
4	Audio - Gnd	Ground	⏚	x	x	x
5	Blue - Gnd	Ground	⏚	x	x	x
6	Audio - L	0.5 V_rms / 10 kohm	→○	x	x	x
7	Blue / U	0.7 V_pp / 75 ohm	→○	x	x	o
	C-out	0.3 V_pp / 75 ohm	○→	-	-	o
8	CVBS-status	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→○	x	x	x
9	Green - Gnd	Ground	⏚	x	x	x
10	P50 Easylink		→○○→	o	x	o
11	Green / Y	0.7 V_pp / 75 ohm	→○	x	x	o
12	N.C.			o	o	o
13	Red - Gnd	Ground	⏚	x	x	x
14	FBL - Gnd	Ground	⏚	x	x	x
15	Red / V	0.7 V_pp / 75 ohm	→○	x	x	o
	C-in	0.3 V_pp / 75 ohm	→○	-	x	x
16	Status / FBL	0 - 0.4 V: INT1 - 3 V: EXT / 75 ohm	→○	x	x	o
17	Video - Gnd	Ground	⏚	x	x	x
18	Video - Gnd	Ground	⏚	x	x	x
19	CVBS-out	1 V_pp / 75 ohm	○→	x	x	o
	Y-out	1 V_pp / 75 ohm	○→	-	-	o
20	CVBS-in	1 V_pp / 75 ohm	→○	x	x	x
	Y-in	1 V_pp / 75 ohm	→○	-	x	x
21	Shielding	Ground	⏚	x	x	x

x = connected

o = not connected

- = not used

Because this set is not equipped with a side I/O, a separate converter is added with the set. Use this SCART to cinch adaptor to connect temporary peripheral equipment (camcorder, digital camera, game boy, etc.) to EXTERNAL 3. **Note:** do not connect the CVBS and Y/C connector of one device at the same time.

Aerial - In

- IEC-type Coax, 75 ohm ┐┌

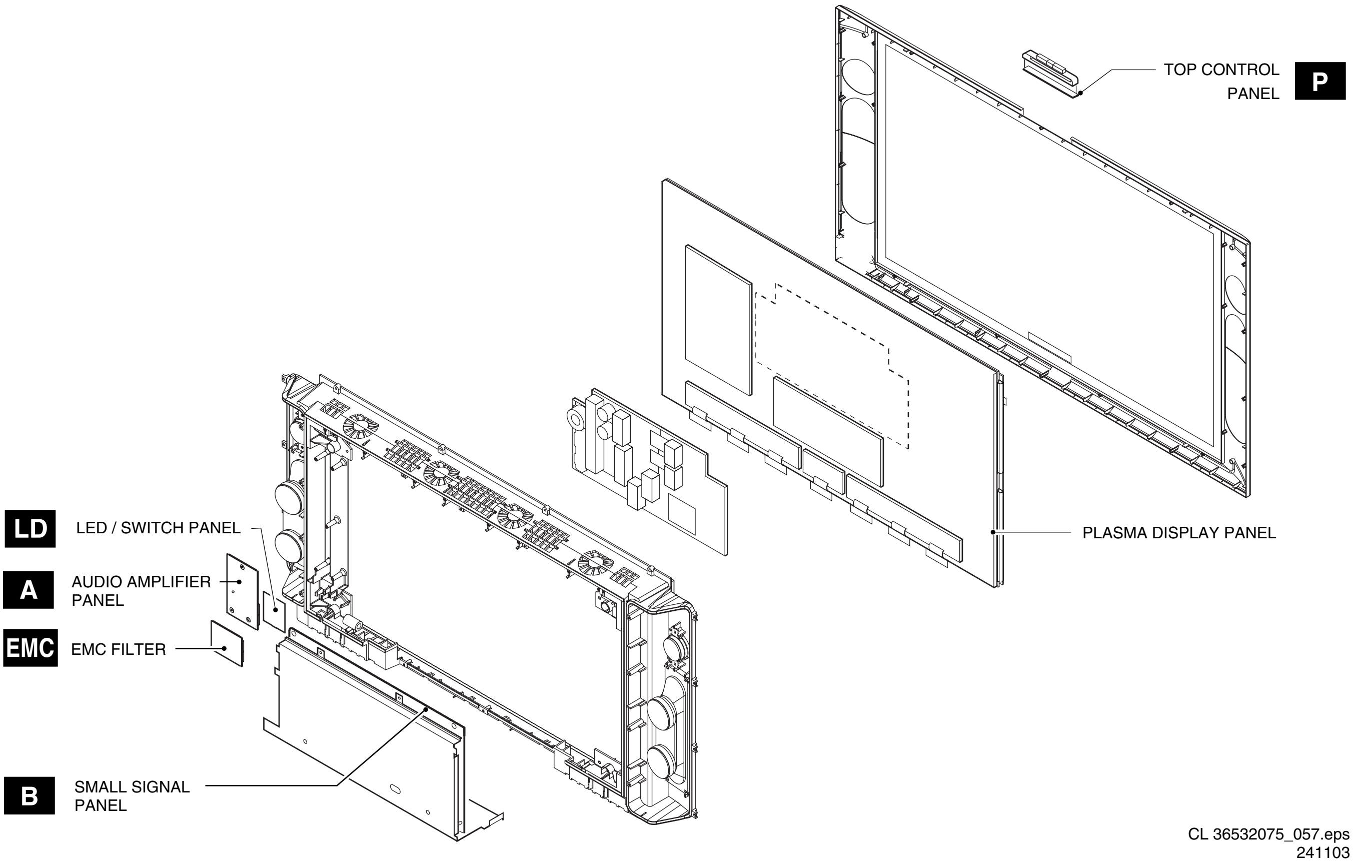
TOP CONTROL PANEL
P
LD
LED / SWITCH PANEL
A
AUDIO AMPLIFIER PANEL
EMC
EMC FILTER
B
SMALL SIGNAL PANEL
PLASMA DISPLAY PANEL
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Figure 1-4 Chassis Overview

2. Safety Instructions, Warnings, and Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the mains via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the strain relief of the mains cord for proper function.
- Check the electrical DC resistance between the mains plug and the secondary side (only for sets which have a mains isolated power supply):
  1. Unplug the mains cord and connect a wire between the two pins of the mains plug.
  2. Set the mains switch to the "on" position (keep the mains cord unplugged!).
  3. Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the mains plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- In order to prevent damage to ICs and transistors, avoid all high voltage flashovers.
- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and ground cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Never replace modules or other components while the unit is 'on'.
- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (▽), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz (PAL) or 61.25 MHz (NTSC, channel 3).
- Where necessary, measure the waveforms and voltages with (⫪) and without (⫪̸) aerial signal. Measure the voltages in the power supply section both in normal operation (◐) and in standby (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

2.3.2 Schematic Notes

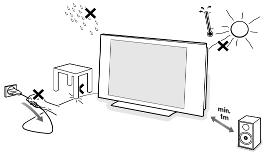
- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are expressed in micro-farads (μ= x10^-6), nano-farads (n= x10^-9), or pico-farads (p= x10^-12).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Electrical Replacement Parts List. Therefore, always check this list when there is any doubt.

3. Directions for Use

Preparation

❶ **Wall mounting instructions**
For the wall mounting instructions follow the separate template.
Make sure that the wall mount is being fixed securely enough so that it meets safety standards. The weight of the TV (excl. packaging) is about 35 kg.
How to mount the supplied stand, see the separate leaflet.
Note: other (not supplied) stands are optional accessories. Consult your dealer.

❷ Place or hang the TV wherever you want, but make sure that air can circulate freely through the ventilation slots. Do not install the TV in a confined space such as a book case or a simular unit.



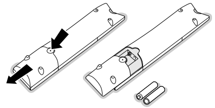
To prevent any unsafe situations, no naked flame sources, such as lighted candles, should be placed on or in the vicinity. Avoid heat, direct sunlight and exposure to rain or water. The equipment shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on it.

❸ Insert the aerial plug firmly into the aerial socket ⊤ at the bottom of the TV. For best picture quality use the suppressor-aerial cable supplied.

❹ To connect your computer, see p. 20.
To connect other peripherals, see p. 17.
If you dispose of a Cinema Link combination (Cinema Link Audio receiver and/or Cinema Link video recorder and/or DVD player), see the separate supplied instruction manual.
In order to obtain the best result, please use only the supplied antenna cables between the TV and videorecorder, and between videorecorder and antenna connector.

❺ Insert the mains cord supplied into the mains at the bottom of the TV and in the wall socket having a mains voltage of 220-240V.
To prevent damaging the power (AC) cord which could cause a fire or electric shock, do not place the TV on the cord.

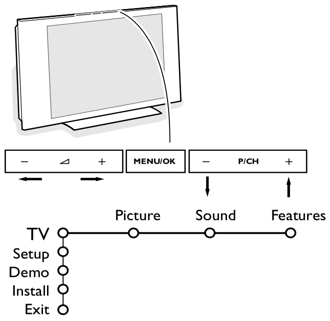
❻ **Remote control**: Insert the 2 batteries supplied (Type R6-1,5V).



The batteries supplied do not contain the heavy metals mercury and cadmium. Please check on how to dispose of exhausted batteries according to local regulations.

❼ **Switch the TV on** : Press the power switch ⏻ at the right side of the TV.
An indicator on the front of the TV lights up and the screen comes on. If the TV is in standby mode, press the **-P+** keys or the ⏻ key on the remote control.

Keys on top of the TV



Should your remote be lost or broken you can still change some of the basic settings with the keys on top of your TV.

Press:
- the ⊿ **-** or **+** key to adjust the volume;
- the **-P/CH+** keys to select the TV channels or sources.

The **MENU/OK** key can be used to summon the main menu without the remote control.

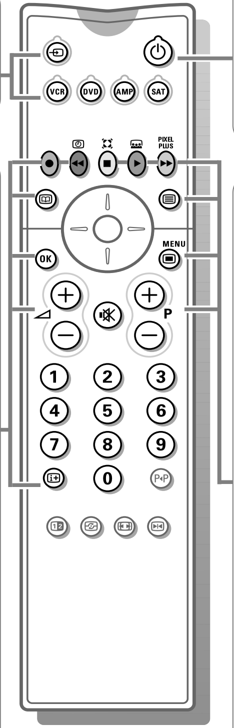
Use:
- the ⊿ - and + keys and the **P/CH-** and **P/CH+** keys to select menu items in the directions as shown;
- the **MENU/OK** key to confirm your selection.

Note:
*When activated via the **MENU/OK** key on top of the TV, only **Exit** lets you dismiss the menu.*
*Navigate to **Exit** and press the **MENU/OK** key.*

Use of the remote control RC2080

Note: For most keys pressing a key once will activate the function. Pressing a second time will de-activate it.
When a key enables multiple options, a small list will be shown. Press repeatedly to select the next item in the list.
*The list will be removed automatically after 4 seconds or press **OK** to remove immediately.*

Remark: in VGA mode only some keys are valid.



Select peripherals (p. 18)

VCR DVD AMP SAT
Audio- and Video equipment keys (p. 21)

● ◀◀ ■ ▶ ▶▶
Audio- and Video equipment keys (p. 21)

● Record
See Record with your recorder with EasyLink, p. 21

Time display
The time is displayed on the screen.

NEXTVIEW on/off p. 13

OK Press this key
- to activate your choice, when in the menus.
- to display the programme list.

⊿ To adjust the volume.

Interrupt the sound or restore it.

On Screen information
Press to display (when available) information about the selected TV channel and programme.

Menu/Remote control info
When a menu is on screen, press i+ to display info on the selected menu item. For information on the remote control functions, while the menu info is displayed, press any key on the remote control.
The normal function of the key is not executed.

⏻ **Standby**
Press to switch the TV on or off.
When switched off, a red indicator on the TV lights up. When acquiring NEXTVIEW, see p. 14, an orange indicator lights up and after a period of max. 1 hour the TV is switched to full standby and the red indicator lights up.

Surround mode

Incredible surround
With stereo transmission, and when Incredible surround is selected, it seems as though the loudspeakers are spread further apart from one another.

Virtual Dolby surround
Optimal with Dolby surround signals. Enables you to experience the effect of Dolby surround Pro Logic, reproducing a rear sound effect. See Sound menu, 3D effect, p. 11.
Note: You can make the same selection in the Sound menu, surround mode, p. 11.

Cinema Go
See separate Cinema Link booklet supplied.

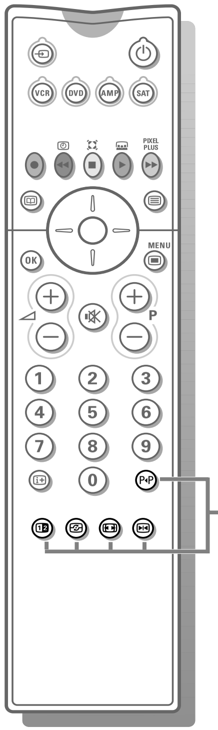
PIXEL PLUS no function

Teletext on/off p. 15

Main menu see p. 5

P Programme selection
To browse through the TV channels and sources stored in the favourite list.

0/9 Digit keys
To select a TV channel.
For a two digit programme number, enter the second digit within 2 seconds. To switch immediately to a selected one digit TV channel, keep the digit key pressed a bit longer.

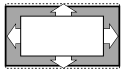


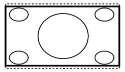
P◂P Previous TV channel
Press to display the previously selected TV channel.

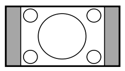
1|2 no function

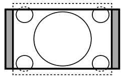
Active control see p. 11

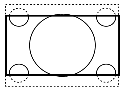
Picture format
Press this key repeatedly or press the cursor up/down to select another picture format: Auto format, Super zoom, 4:3, Movie Expand 14:9, Movie Expand 16:9, Subtitle zoom or Wide screen.
Auto format makes the picture fill the screen as much as possible.

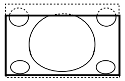

Auto format

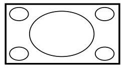

Super zoom


4:3


Movie Expand 14:9


Movie Expand 16:9


Subtitle zoom


Wide screen

In case of subtitles in the bottom black bar, Auto format makes the subtitles visible. If subtitles are only partly visible, press cursor up.
In case of a broadcaster logo in the corner of the top black bar, the logo disappears from the screen.

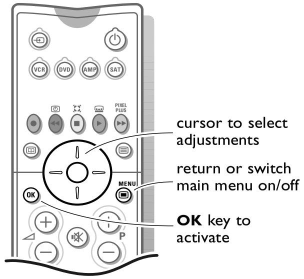
Super zoom removes the black bars on the sides of 4:3 programs with minimal distortion.

When in Movie Expand 14:9, 16:9, Super zoom or Subtitle zoom picture format, you can make subtitles visible with the cursor up/down.

*Note: With signals via the **VGA IN** connector less picture formats are selectable.*

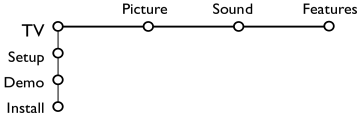
Freeze
To freeze the picture.
Dependent on the input signal, the function may not be possible.

To use the menus


cursor to select adjustments
return or switch main menu on/off
OK key to activate

Press the [i+] key to get information about the selected menu item.

❶ Press the **MENU** key on the remote control to summon the main menu. At any moment you can exit the menu by pressing the **MENU** key again.
Note: If you have connected equipment with Cinema Link, more menu items are present.


TV
Setup
Demo
Install
Picture
Sound
Features

❷ Use the cursor in the up/down direction to select the **TV**, **Setup**, **Demo** or **Install** menu.
Use the cursor left/right to select **Picture**, **Sound** or **Features**.
Note: Sometimes not all the menu items are visible on the screen (indicated by a cluster of blue balls). Use the cursor down or right to reveal all items.

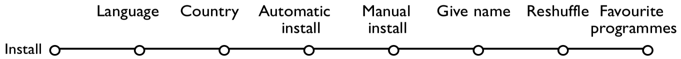
❸ Use the cursor in the left/right direction to select the menu item.

❹ Use the cursor up/down again to select the control you want to select or to adjust.

Note: Items temporary not available or not relevant are displayed in a light grey colour and cannot be selected.

Installation

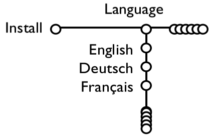
The installation menu contains the following items:

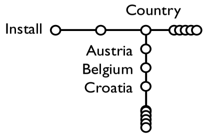

Install
Language
Country
Automatic install
Manual install
Give name
Reshuffle
Favourite programmes

EasyLink

If your video recorder has an EasyLink function, during installation, the language, country and available channels are automatically transmitted to the video recorder.

Select the menu language and country


Install
Language
English
Deutsch
Français

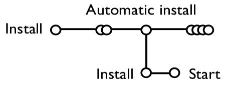

Install
Country
Austria
Belgium
Croatia

❶ Press the **MENU** key on the remote control.
❷ Use the cursor down to select **Install**.
❸ Use the cursor right to select **Language**.
Follow the instructions on screen.
❹ Use the cursor up/down to select your preferred language and press the **OK** key to confirm your selection.
❺ Use the cursor right to select **Country**.
❻ Select the country where you are now located and press the **OK** key.
Select **Other** when none of the countries applies.
❼ Proceed with the **Install** menu.

Store TV channels

After language and country are set correctly, you can now search for and store the TV channels in two different ways: using Automatic Installation or Manual Installation (tuning-in channel by channel).
Select your choice with the cursor right.

Automatic installation



❶ Select **Automatic install** in the Install menu.
Note: All channels must be unlocked in order to autoprogram. If requested, enter your code to unlock all channels. (See TV, Features menu, Childlock, p. 12.)

❷ Press the cursor down.
The autoprogramming option label **Start** appears.

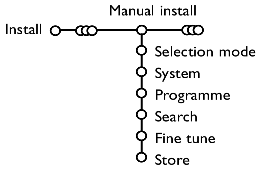
❸ Press the cursor right.

❹ The message **Searching** appears and the progress of autoprogramming is displayed.

If a cable system or a TV channel which broadcasts ACI (Automatic Channel Installation) is detected, a programme list appears. Without ACI broadcast, the channels are numbered according your language and country selection. You can use Reshuffle to renumber them. See p. 7.

*It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel. Make your choice with the cursor and press the **OK** key.*

Manual installation



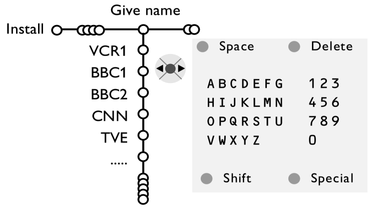
Searching for and storing TV channels is done channel by channel. You must go through every step of the Manual Installation menu.

❶ Select **Manual install** in the Install menu.
Note: If requested, enter your code to unlock all channels. (See TV, Features menu, Childlock, p. 12.)

❷ Press the cursor down.
Follow the instructions on screen.
Note: Search or direct selection of a TV channel.
If you know the frequency, the C- or S-channel number, enter the 3 or 2 digits of the frequency or the channel number directly with the digit keys 0 to 9 (e.g. 048). Press the cursor down to proceed.

Repeat to search for another TV channel.

Give name



It is possible to change the name stored in the memory or to assign a name to a TV channel or external for which a name has not yet been entered. A name with up to 5 letters or numbers can be given to the programme numbers 0 to 99.

Note : It is not possible to rename the VGA source.

❶ Select **Give Name** in the Install menu and press the cursor down.

❷ Select the programme number.
Note: keep the cursor up/down pressed to scroll through the programme list quickly.

❸ Press the cursor right.
A keyboard appears on the screen.
Press the cursor right to enter the keyboard.
Press the cursor up/down, left/right to select the first character and press **OK**. Repeat for every character you want to enter.
Select **Space** to enter a space; **Delete** to erase the highlighted character in the name entered; **Shift** to display upper- or lowercase characters on the keyboard; **Special** to display special characters on the keyboard. Press **OK** to confirm.

❹ Press the cursor left repeatedly when you have finished the name giving.

❺ Select another programme number and repeat steps ❸ to ❹.

Reshuffle the programme list

You can change the order of the stored TV channels.

❶ Select **Reshuffle** in the Installation menu.

❷ Follow the instructions on screen.

Select Favourite TV channels

A VGA source always belongs to the list of **Favourite programmes**.

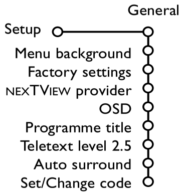
❶ Select **Favourite programmes** in the Install menu.

❷ Select your programme number with the cursor up/down.

❸ Select **Yes** or **No** with the cursor right.

❹ Repeat ❷ and ❸ for every TV channel or external you want to make a favourite or a non-favourite TV channel or external.

TV Setup



The Setup menu contains items that control the settings of the TV's functions, features, services and peripherals you may have connected.

The **General** menu allows you to change settings that will typically be accessed only occasionally.
The **Source** menu allows you to select a source.
The **Decoder** menu allows you to define one or more programme numbers as decoder programme numbers.

General

This menu allows you to change various settings that are presumably adjusted less frequently than most other settings.

Press the i+ key on the remote control to get information about the selected menu item.

Menu background

Select **Yes** or **No** to turn the menu background on or off.

Factory settings

This resets the picture and sound settings to their predefined factory values, but maintains the channel installation settings.

NEXTVIEW provider

Select a TV broadcaster that provides NEXTVIEW data. How to make use of NEXTVIEW, see p. 13.

OSD (On Screen Display)

See Use of the remote control, p. 3, i+ On screen information.

❶ Select **OSD**.

❷ Select **Normal** to activate the continuous display of the programme number. Also TV channel and programme information are extended. **Minimum** will display reduced channel information.
Note: When subtitles is switched on, see Features, p.12, continuous display of the programme number is not possible.

Programme title

Select **Programme title Yes** or **No**.
When selected **Yes**, after the selection of a TV programme or after pressing the i+ key on the remote control, a TV channel which broadcasts teletext may transmit the name of the TV channel or the programme title.
When selected **No**, the programme title will only appear after pressing the i+ key, and not after the selection of a TV channel.

Teletext level 2.5

Some broadcasters offer the opportunity to see more colours, other background colours and nicer pictures in the teletext pages.

❶ Select **Teletext level 2.5**.

❷ Press the cursor right to select **Teletext level 2.5 On** to take advantage of this feature.

❸ Press the cursor right again to select **Teletext level 2.5 Off** if you like the more neutral teletext layout.
The selection made is valid for all channels which broadcast teletext level 2.5.
Note: It may take a few seconds before teletext broadcast switches over to Teletext level 2.5.

Auto Surround

Sometimes the broadcaster transmits special signals for Surround Sound encoded programmes.
The TV automatically switches to the best surround sound mode when **Auto Surround** is switched **On**.

Set/Change code

The Child lock feature (see TV, Features, p. 12) allows you to lock channels to prevent others from watching certain programmes. To watch locked channels, a 4-digit code must be entered. The Set/Change code menu item allows you to create or change a Personal Identification Number (PIN).

❶ Select **Set/Change code**.

❷ If no code exists yet, the menu item is set to Set code.

If a code has previously been entered, the menu item is set to **Change code**. Follow the instructions on screen.

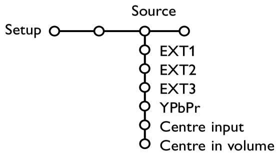
Important: You have forgotten your code !

❶ Select **Change code** in the General menu and press **OK**.

❷ Press the cursor right and enter the overriding code 8-8-8-8.

❸ Press the cursor again and enter a new personal 4-digit code. The previous code is erased and the new code is stored.

Source



This menu allows you to indicate the peripheral you connected to one of the external inputs.

❶ Press the cursor right to enter the list of types of peripherals attached to the selected input.

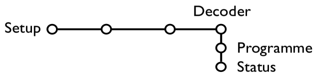
❷ Select the peripheral device with the cursor up/down.

Once you have selected the source type, e.g. DVD, this source will automatically be selected when your remote control is in DVD mode, see p. 3, and when you press the ⊕ key on the remote control.

Centre input - Centre in volume

When you have connected a surround receiver to the TV, see p. 18, the loudspeakers of the TV can act as centre speaker, making a separate centre speaker unnecessary.
Select **Centre input On** or **Cinema Link** (in case you have connected a Cinema Link Surround receiver).
When having selected **On** you can adjust the Centre in volume with the cursor left/right to correct volume level differences of the external audio receiver and speakers.
Note: This is not the case with a Cinema Link surround receiver.

Decoder



If a decoder or a descrambler is connected, see p. 17, you can define one or more programme numbers as decoder programme numbers.

❶ Select **Decoder** with the cursor right.

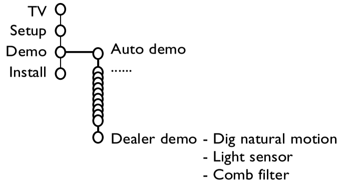
❷ Select **Programme**.

❸ Select the programme number under which you have stored the programme coming from your decoder.

❹ Select **Status**.
- Select the input used to connect your decoder: **None**, **EXT1** or **EXT2**.
- Select **None** if you do not want the selected programme number being activated as a decoder programme number.

*Note: Select **EXT2** when the decoder is connected to your EasyLink video recorder.*

Demo



The Demo menu allows to demonstrate the TV features separately or in a continuous loop.

If **Auto demo** has been selected the demo will automatically present the features sequentially in a loop. Press one of the cursor keys to stop the Auto demo.
If one of the features has been selected, this particular feature demo will run only once, and the Demo menu will reappear.

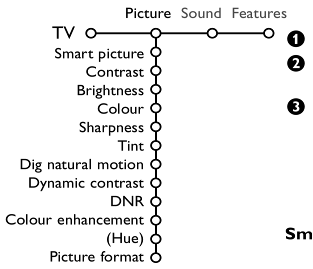
Note: The Dealer demo is not part of the automatic sequence and can only be activated separately.

TV menu

Press the **MENU** ▣ key on the remote control to summon the main menu.
Note: Dependent on the input signal, one or more menu items may not be selectable.

Press the i+ key on the remote control to get information about the selected menu item.

Picture menu



① Press the cursor right to select **Picture**.
② Select the menu items in the Picture menu with the cursor up/down.
③ Adjust the settings with the cursor left/right or enter the list of submenu items with the cursor right. Select a submenu item with the cursor up/down.

Note: To remove the menu background before adjusting the picture settings, see Select TV setup, General, p. 7.

Smart picture

Select **Smart picture** to display a list of predefined picture settings, each corresponding with specific factory settings. **Personal** refers to the personal preference settings of picture in the picture menu.

Dig natural motion

Line doubling eliminates line flicker, motion compensation reduces jitter and offers smooth, yet sharp motion reproduction in movie broadcasts.
Select **On** or **Off** to really see the difference in picture quality.

Dynamic contrast

Sets the level at which the TV automatically enhances the details in dark, middle and light areas of the picture.

DNR

This sets the level at which noise is measured and reduced in the picture.

Colour enhancement

This makes the colours more vivid and improves the resolution of details in bright colours.

Hue

This compensates for the colour variations in NTSC encoded transmissions.

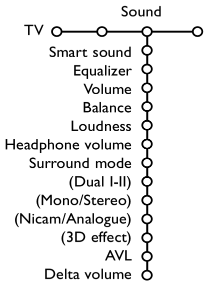
Picture format

This will adjust the size of the picture dependent on the broadcast format and your preferred setting.

Active Control

The TV continuously measures and corrects all incoming signals in order to provide the best picture possible.
① Press the ⧉ key on the remote control.
② The Active Control menu appears.
③ Press the cursor up/down to select the Active Control values **Off**, **Minimum**, **Medium** (recommended) or **Maximum**.
The picture settings are being optimised continuously and automatically which is displayed by bars. The menu items can not be selected.
④ Press the cursor right to select **Smart Picture**.
⑤ Press the cursor up/down to select one of the predefined picture settings.
⑥ Press the cursor right to select **Active Display**.
⑦ Press the cursor up/down to select **Show bars**, one of the Dual screen demos or **Off**.
When you select Dynamic contrast, Digital Noise Reduction or Digital Natural Motion, the TV screen is divided into two parts: in the left part the selected picture quality setting is switched off; in the right part it is switched on.
Note: Dependent on the input signal, one or more Dual screen demos may not be selectable.
⑧ Press the ⧉ key again to switch off the Active Control menu.

Sound



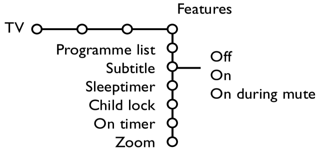
① Press the cursor right to select **Sound**.
② Select the menu items in the Sound menu with the cursor up/down and adjust the settings with the cursor left/right. Remember, control settings are at normal mid-range levels when the bar scale is centred.

Smart sound

Select **Smart sound** to display a list of predefined sound settings, each corresponding with specific factory settings of Treble and Bass. **Personal** refers to the personal preference settings of sound in the sound menu.

Notes:
- *Some menu items are only available in case of a Cinema Link configuration and when the Cinema Link is activated. Others are steered by the audio receiver instead of by the TV. See the separate Cinema Link booklet supplied.*
- *Dual I-II is only available with dual sound transmission.*
- *Mono/Stereo is only selectable in case of analogue stereo transmission.*
- *Nicam/Analogue is only selectable in case of Nicam transmission.*

Features menu



① Press the cursor right to select **Features**.
② Select the menu items with the cursor up/down and adjust the settings with the cursor left/right.

Use the on-screen Menu-Info i+ for more information about the menu items.

Programme list

Press the **OK** key to switch over to the selected TV channel or external.

Select subtitles

The subtitle page must be stored for each TV channel:
Switch on teletext and select the proper subtitle page from the index. Switch off teletext.
Subtitle On will automatically display them on the selected TV channels if subtitles are in the transmission. A symbol will indicate that the mode is on.
Select **On during mute** when you want to have the subtitles automatically displayed only when the sound has been muted with the 🔇 key on the remote control.

Child lock

Note: A VGA source can not be locked.

❶ Select **Child lock**.

Child lock ○— Lock / Custom lock / Unlock
Custom lock — Age lock / Lock after / Programme lock / Category lock

❷ Press the cursor right to enter the Child lock menu. You're summoned to enter your code.
Note: You have to re-enter your code each time you enter the child lock menu.

Important: You have forgotten your code ! See p. 8.

❸ Select one of the menu items of the child lock menu:
- **Lock** if you want to lock all channels and externals.
- **Custom lock** and press the cursor right.
  The items Age lock and Category lock are only available when NEXTVIEW broadcast is available.
  Select:
  - **Age lock** if you want to lock programmes related to a certain age: off, 2, 4 ... 18;
  - **Lock after** if you want to lock all programmes from a certain time onwards. Press the cursor right and enter the time with the cursor up/down and right. Press the **OK** key to validate.
  - **Programme lock** if you want to lock a certain TV channel or external;
  - **Category lock** if you want to lock programmes related to a certain theme: Movies, Sports, Shows....
- Select **Unlock** to disable all locks you have set.

On timer

❶ Select **On timer** with the cursor down.

On timer ○— Off / On
On — VCR1 / BBC2 / CNN / TVE / ▶.....
TVE — Sunday / Monday / .... / Daily
Daily — 15:45

❷ Select **On** with the cursor right.
❸ Press the cursor right again to enter the programme list.
❹ Select the TV channel or external you want your TV to switch to on a selected time and day.
❺ Press the cursor right again to select a day of the week or to select **Daily**.
❻ Press the cursor right once again to enter the time with the digit keys or with the cursor up/down and press the **OK** key to activate.
❼ Press the **MENU** ▣ key to turn off the menu.
Note: To check your timer settings, press the ⓘ *key.*

Zoom

Note: Dependent on the input signal, Zoom may not be selectable.

❶ Select **Zoom** with the cursor down and press the **OK** key.
❷ Press the **OK** key to select one of the zoom magnifications (x1, x4, x9, x16).
❸ Additionally you can shift the selected zoom window over the screen with the cursor keys up/down, left/right.
❹ Press the **MENU** ▣ key to turn off the zoom function.

NEXTVIEW / Teletext guide

NEXTVIEW is an electronic guide that allows you to look up programmes as you would in a newspaper or a TV magazine. You can sort the programmes by subject (films, sport...), obtain detailed information and programme your video recorder if it comes with the NEXTVIEWLink function.

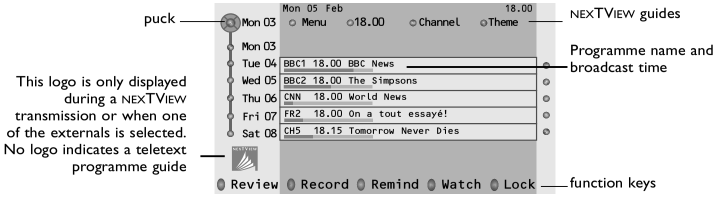
Important note: ***The NEXTVIEW service is only available on certain programmes and in certain countries****. When no NEXTVIEW information is broadcast, the teletext programme guide appears in its place. This is based on teletext programme information (if available) and offers most functions of NEXTVIEW.*
Note: The broadcaster is responsible for the content of the information.

Call NEXTVIEW / Teletext guide

Press the 📖 key on the remote control to call the NEXTVIEW/Teletext guide. A menu appears with the message **One moment please**. After a while you obtain:
- a NEXTVIEW page, if the selected channel broadcasts this service (the NEXTVIEW logo is displayed),
- a teletext page, if the selected channel does not broadcast NEXTVIEW,
- **No information available** is displayed if neither NEXTVIEW nor teletext are transmitted. In this case, select another channel.

Display of a NEXTVIEW page

The information is set by the channel that transmits the NEXTVIEW service. See also Setup menu, General, NEXTVIEW provider, p. 8.



Mon 05 Feb 18.00
Menu 18.00 Channel Theme
Mon 03
Mon 03
Tue 04 BBC1 18.00 BBC News
Wed 05 BBC2 18.00 The Simpsons
Thu 06 CNN 18.00 World News
Fri 07 FR2 18.00 On a tout essayé!
Sat 08 CH5 18.15 Tomorrow Never Dies
Review Record Remind Watch Lock

puck
NEXTVIEW guides
Programme name and broadcast time
This logo is only displayed during a NEXTVIEW transmission or when one of the externals is selected. No logo indicates a teletext programme guide
function keys

NEXTVIEW guides

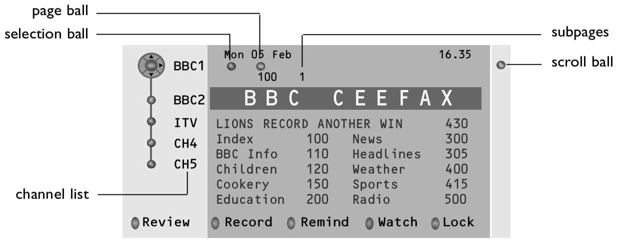
❶ Use the cursor key left/right to select **Time**, **Channel**, **Theme**, the **Date** guide (or menu).
The **Time guide** provides an overview of all programme titles active in the selected time block. The **Channel guide** provides an overview of all programmes that are broadcast by a single channel during one day. With the **Date guide** you can choose a specific date. The **Theme guide** displays a list of all programmes at the selected date, that matches with the selected category.
Going through the menu guide, the TV is collecting the sorting criteria to finally display a list of programme events.
❷ Press the **OK** key to select the guide type.
❸ Move the puck down and to the right to select the programmes.
If available a summary or commentary on the programme is displayed at the bottom of the screen.
❹ Use the cursor up/down to scroll through the programmes.

Teletext Guide

❶ Enter with the digit keys, the teletext page number that contains the programme information for the current channel.

❷ Press the cursor right to move the puck over the selection ball.

❸ Use the cursor up/down to scroll through the different programmes.



```
BBC1   Mon 05 Feb                       16.35
           100    1
BBC2   B B C   C E E F A X
ITV    LIONS RECORD ANOTHER WIN        430
CH4    Index       100   News          300
CH5    BBC Info    110   Headlines     305
       Children    120   Weather       400
       Cookery     150   Sports        415
       Education   200   Radio         500
Review  Record  Remind  Watch  Lock
```

- If the selected programme contains a page number with an optional subcode referring to a page with more info about the programme, press the **OK** key to display the information. Press the **OK** key again to return to the programme guide page.
- If the selected programme guide page satisfies the VPT requirements,
- it will be possible to record, remind, watch or lock programmes:
- the TV will remember the last selected teletext page number of that channel that contains programme guide information and indicates which programme starts at what time. Every time you press the 📖 key, the teletext programme guide page of the selected TV channel will be available.
- When necessary you can select the subpage number by moving the cursor to the pageball and pressing right.

Note: You must enter the teletext pagenumber for each channel. You can change the channels also by moving the cursor up/down in the list in the left of the page.

Basic functions

Press one of the grey, red, green, yellow or blue keys to activate a NEXTVIEW or Teletext Guide function. The keys appear in grey if the function is not available.

Review: this menu provides a list of programmes that are marked as reminders, those that have to be recorded and those that are locked. This menu can be used to change or remove marked programmes.

Record: to programme the recording of the video recorder (if it has a NEXTVIEWLink function and is connected to **EXT. 2**).

Remind: automatically switch on the TV if it is in standby or by displaying a message if the TV is on.

Lock: to lock certain programmes to prevent recording or watching.

For the functions Record, Remind or Lock, a small menu pops up in which you can choose the interval: once, daily or weekly, or clear an earlier made record, remind or lock setting. The default interval is set to **Once**. To confirm the frequency, press the **OK** key.

Watch: to watch the selected and currently broadcast programme.

Acquisition and updating of NEXTVIEW information

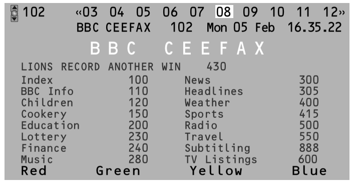
Acquisition and updating of NEXTVIEW is done when you are watching the TV channel of the selected NEXTVIEW provider, see Setup menu, p. 8, or when the TV is switched to standby;
Acquisition of fresh data will happen once during the night.
Note: it may be necessary to put the TV in standby mode when all NEXTVIEW information is outdated, e.g. when returning from holiday.

Teletext

Most TV channels broadcast information via teletext. This TV has a 1200 pages memory that will store most broadcasted pages and subpages to reduce waiting time. After each programme change, the memory is refreshed.

Switch Teletext on and off

Press ▤ to switch the teletext on.



```
102      «03 04 05 06 07 08 09 10 11 12»
         BBC CEEFAX  102  Mon 05 Feb  16.35.22
            B B C   C E E F A X
LIONS RECORD ANOTHER WIN   430
Index          100     News          300
BBC Info       110     Headlines     305
Children       120     Weather       400
Cookery        150     Sports        415
Education      200     Radio         500
Lottery        230     Travel        550
Finance        240     Subtitling    888
Music          280     TV Listings   600
Red       Green       Yellow      Blue
```

Select a Teletext page

- Enter the desired page number with the digit keys, the cursor keys up/down or with the -P+ key.
- Select the options at the bottom of the screen with the colour keys.

Previously selected teletext page

(Only possible in case there is no list of favourite teletext pages available. See p. 16.)

Press the P◂P key.

Select the index teletext page

Press the grey colour key ▶▶ to display the main index (usually p.100).

Only for T.O.P teletext broadcasts:

Press ⓘ. A T.O.P. overview of the teletext subjects available is displayed.
Select with the cursor up/down, left/right the desired subject and press the **OK** key.
Not all TV channels broadcast T.O.P. teletext.

Select subpages

When a selected teletext page consists of different subpages, a list of available subpages appears on the screen.
Press the cursor left or right to select the next or previous subpage.

Enlarge a Teletext page

Press ⊞ repeatedly to display the upper teletext part, the lower teletext part and then to return to the normal teletext page size. When the teletext page is enlarged, you can scroll the text, line by line using the cursor up/down.

Hypertext

With hypertext you can quickly jump to a pagenumber or search for a specific word shown on the current teletext page.

❶ Press the **OK** key to highlight the first word or a number on the page.

❷ Use the cursor up/down, left/right to select any other word or number you want to search for.

❸ Press the **OK** key to confirm. The search starts. A message appears at the bottom of the screen to indicate the searching, or that the word or page is not found.

❹ Use the cursor up to exit hypertext.

Teletext menu

❶ Press the **MENU** ▣ key to activate the menu.
❷ Press the cursor up/down to select the menu items.
❸ Press the cursor right to activate.

Reveal

Reveals/conceals hidden information on a page, such as solutions to riddles and puzzles.
Press the cursor right to activate.

Favourite

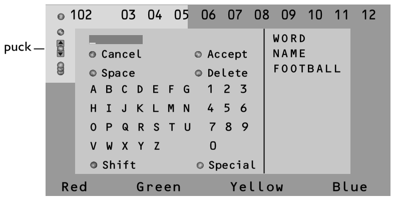
This list contains up to eight favourite teletext pages. Only the pages of the current channel can be selected.

❶ Press the cursor right to enter the list.
❷ Press the cursor right again to add the current page or to select one of the favourite pages to the list.
❸ Press the **MENU** ▣ key to watch the page.
❹ Use the P<P key to browse through the list of favourite pages.

Search

Selecting a word

On the keyboard on screen you can type in a random word you want to search for in the teletext pages. Whether upper- or lowercase is used has no influence.



❶ Press the cursor right to enter the keyboard.
❷ Press the cursor left/right, up/down to select the characters, words or functions.
❸ Press the **OK** key to confirm each character selected.
❹ Select **Cancel** to cancel the word; **Space** to enter a space; **Delete** to delete the last character selected; **Shift** to switch between lowercase or capital characters; **Special** to display special characters on the keyboard and press the **OK** key.
❺ Press the cursor left repeatedly to return to the Teletext menu again.

Searching a word

❶ Type in the word on screen or select a word from the history list on the right and press **OK**.
❷ Select **Accept** and press **OK** again. The message **Searching** appears.
❸ To cancel the searching or to search for a new word, select **Keyboard** and press **OK**.
❹ When a word is not found, a message appears. When the word is found, it is highlighted in the teletext page. To continue the search, press the **OK** key.

Cycle subpages *(if available)*

Makes the subpages cycle automatically.
Press the cursor right to activate and to de-activate again.

Timed page

To display a specific page from a selected TV channel at a certain time.

❶ Press the cursor right and select **Yes** or **No**.
❷ Enter the time and pagenumber with the cursor keys or the digit keys.
Note: Teletext does not have to remain switched on, but you should watch the TV channel you have selected the specific page from.
❸ Press the cursor left to return to the TV menu again.

Language

If the displayed characters on screen do not correspond with the characters used by the teletext broadcaster, you can change the language group here.
Select **Group 1** or **2** with the cursor right.

Press the **MENU** ▣ key to leave the Teletext menu.

Connect Peripheral Equipment

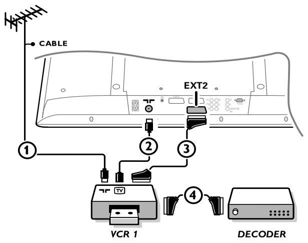
There is a wide range of audio and video equipment that can be connected to your TV.
The following connection diagrams show you how to connect them.

*Note: **EXT 1** can handle CVBS and RGB; **EXT 2** CVBS, Y/C and RGB; **EXT 3** CVBS and Y/C; **YPbPr** Y-Pb-Br 480p, 576p, 1080i; **VGA IN** can hancle VGA, SVGA and 480p, 576p, 1080i.*
*It is preferred to connect peripherals with RGB output to **EXT 1** or **EXT 2** as RGB provides a better picture quality.*

*Note: If your recorder is provided with the EasyLink function, it should be connected to **EXT 2** to benefit from the EasyLink functionality.*

Recorder (VCR-DVD+RW)

Note: Do not place your recorder too close to the screen as some recorders may be susceptible for signals out of the display. Keep a minimum distance of 0,5 m to the screen.

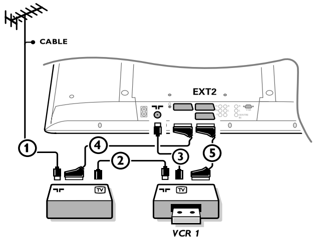


Connect the aerial cables ①, ② and, to obtain the optimum picture quality, eurocable ③ as shown.
If your recorder does not have a euroconnector, the only possible connection is via the aerial cable. You will therefore need to tune in your recorder's test signal and assign it programme number 0 or store the test signal under a programme number between 90 and 99, see Manual installation, p. 6.
See the handbook of your recorder.

Decoder and Recorder

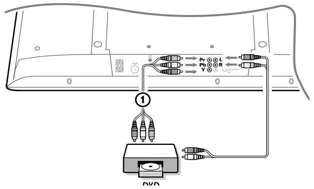
Connect a eurocable ④ to your decoder and to the special euroconnector of your recorder. See also the recorder handbook. See Decoder, p. 9. You can also connect your decoder directly to **EXT1** or **2** with a eurocable.

Other equipment (satellite receiver, decoder, DVD, games, etc.)



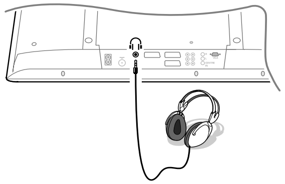
❶ Connect the aerial cables ①, ② and ③ as shown (only if your peripheral has TV aerial in-/output).
Connect your equipment with a eurocable ④ or ⑤ to one of the euroconnectors **EXT1**, **2** or **3** to obtain a better picture quality.
❷ Look for the test signal of your peripheral in the same way as you do for a recorder.
❸ Make a selection in the Setup, Source menu, p. 9.

Equipment with Component Video Output Connectors (YPbPr)



❶ Connect the three separate component video cables ① to the DVD player's **Y**, **U** (Pb) and **V** (Pr) jacks and to the Y, Pb and Pr jacks on the TV.
❷ Connect the audio cable to the DVD player's **AUDIO L** and **R** jacks and to the **L** and **R** audio **YPbPr** jacks on the TV.

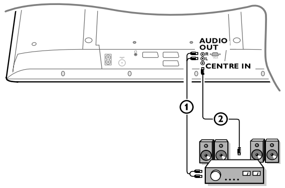
Headphone



❶ Insert the plug into the headphone socket 🎧 as shown.

❷ Press 🔇 on the remote control to switch off the internal loudspeakers of the TV.
The headphone impedance must be between 8 and 4000 Ohm. The headphone socket has a 3.5 mm jack.
In the Sound menu select **Headphone volume** to adjust the headphone volume.

Multi channel Surround receiver


AUDIO OUT
CENTRE IN
①
②

❶ Connect the audio cable to the multi channel Surround receiver and to **AUDIO OUT L** and **R** at the bottom of your TV ①.

❷ If you want the loudspeakers of your TV to act as centre speaker, also connect an audiocable to the multi channel Surround receiver and to the **CENTRE IN** at the bottom of your TV ②.

❸ Select **Centre Input On** in the Source menu. See p. 9.

The loudspeakers of the TV will now only produce centre sound, the loudspeakers connected to the audio receiver will produce Surround Sound. The volume has to be controlled via the multi channel Surround receiver.

Note: No sound will be heard when a TV channel or external source is blocked via the Child lock menu (see p. 12).

To select connected equipment

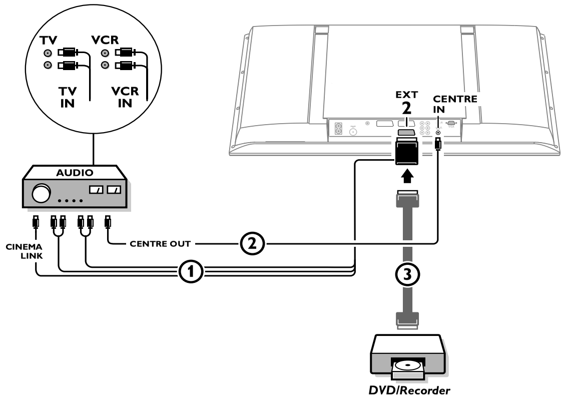
Press the ⇥ key on the remote control repeatedly, or select Source in the Setup menu (see p. 9) to select **EXT1**, **EXT2**, **EXT3**, **YPbPr** or **VGA** according to where you connected your equipment.

Remark : Most equipment (decoder, recorder) carries out the switching itself, when it is switched on.

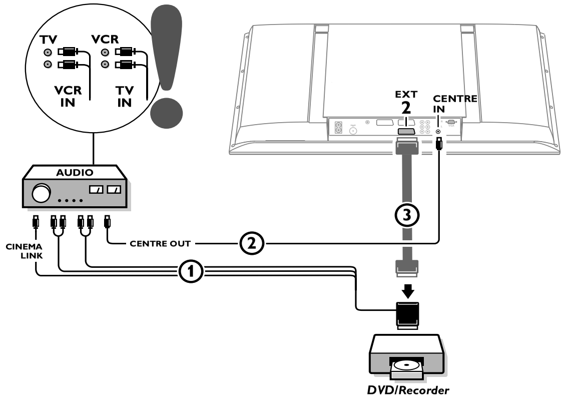
Cinema Link surround receiver

See the separate supplied Cinema Link instruction manual.

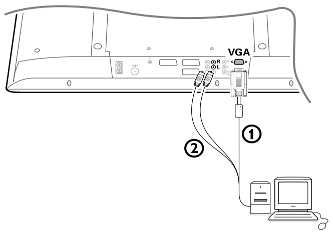
Attention: the sound info on screen will not correspond with the actual sound reproduction.


TV
VCR
TV IN
VCR IN
AUDIO
CINEMA LINK
CENTRE OUT
EXT 2
CENTRE IN
①
②
③
DVD/Recorder

OR


TV
VCR
VCR IN
TV IN
AUDIO
CINEMA LINK
CENTRE OUT
EXT 2
CENTRE IN
①
②
③
DVD/Recorder

Connect your computer



❶ Connect one end of a VGA cable ① to the video card of the computer and the other end to the **VGA** connector at the bottom of the TV.
Fix the connectors firmly with the screws on the plug.

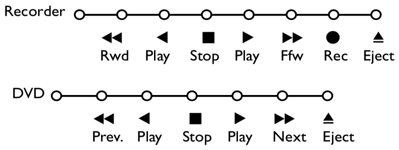
❷ In case of a Multimedia computer, connect the audio cable ② to the audio outputs of your Multimedia computer and to the **AUDIO R** (right) and **L left)** inputs.

The **VGA IN** connector allows the following TV and monitor display modes:

EDTV	640/720 x 480p 720 x 576p	
HDTV	1920 x1080i	
VGA	640 x 480	60 Hz
SVGA	800 x 600	56 Hz

Recorder or DVD with EasyLink

The recorder (VCR or DVD+RW) or DVD can be operated with the remote control via the **Recorder** or **DVD** menu on screen.



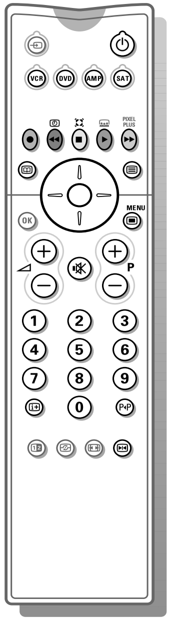
❶ Press the **MENU** ▣ key on the remote control.

❷ Select the **Recorder** or **DVD** menu with the cursor up/down.

❸ Press the cursor left/right, up/down to select one of the recorder or DVD functions.

The key ● for recording can be operated in the TV mode.
If your EasyLink recorder has the system standby function, when you press the ⏻ key for 3 seconds, both TV and the recorder are switched to standby.

Audio- and video equipment keys



Most of the audio and video equipment from our range of products can be operated with the remote control of your TV.

Press one of the keys after you pressed the **VCR**, **DVD**, **AMP** or **SAT** key repeatedly according to the equipment you want to operate with this remote control. See Use of the remote control, p. 3.

⏻	to switch to standby
⏯	for pause (**DVD**, **CD, VCR**)
●	for record
◀◀	for rewind (**VCR**, **CD**); search down (**DVD**, **AMP**)
■	for stop
▶	for play
▶▶	for fast forward (**VCR**, **CD**); search up (**DVD/AMP**)
⊡	to select your choice of subtitle language (**DVD**); RDS news/TA (**AMP**); to shuffle play (**CD**)
☰	to select a **DVD** title; RDS display (**AMP**); info on screen (**CD**)
i+	display information
▣	to switch the menu on or off
- P +	for chapter, channel, track selection
0 to 9	digit entry
P◁P	tape index (**VCR**), select a DVD chapter, select a frequency (**AMP**)
⊙	VCR timer
⛶	surround on/off (**AMP**, **CD**)
cursor up/down	to select the next or the previous disc (**CD**)
cursor left/right	to select the previous or following track (**CD**); to search up/down (**AMP**)

Note: When no action is undertaken within 60 seconds, the remote control returns to TV mode.

Submodes

The **SAT** mode can be customised according to the satellite receiver you want to operate: with **RC6** or **RC5** signalling standard.

Within TV mode, press the **OK** key together with:
digit key 3 to select the **SAT RC-5** system
digit key 4 to select the **SAT RC-6** system.

Record with your recorder with EasyLink

In TV mode, it is possible to start a direct recording of the programme which is being displayed on the TV screen.
Continue to press the ● record key on the remote control for more than 2 seconds.

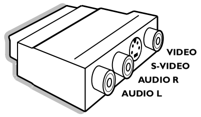
Note:
Switching programme numbers on your TV does not disturb recording !
*When recording a programme from a peripheral connected to **EXT. 1**, **EXT. 3** or **YPbPr** you can not select another TV programme on the screen.*

Tips

Ambient temperature	Do not hang up the monitor above a central heating or other heating sources.
Care of the screen	Clean the anti-reflex coated flat glass screen with a slightly damp soft cloth. Do not use abrasives solvents as it can damage the glass surface of the screen.
Plasma Display characteristics	**Caution**: A video source (such as a video game, DVD, or video information channel) which shows a constant non-moving pattern on the monitor screen, can cause damage to the screen. When your Flat-Monitor is continuously used with such a source, the pattern of the non-moving portion of the game (DVD, etc.) could leave an image permanently on the screen. When not in use, turn the video source **Off**. Regularly alternate the use of such video sources with normal viewing. When switching over to another picture after having displayed the same still picture for a long time (many hours), it may happen that some parts from the previous picture will remain on screen due to a kind of memory effect. This ghost picture will disappear after some time. To avoid this effect change the pictures regularly or for PC use you can turn on a screen saver in your computer. Philips has built in an automatic shift of the picture in video mode every 5 minutes to avoid this effect and to prolong the life of the screen. Very incidentally and after a longer period of unuse (approx. 1 year) the screen may display some strange colour deficiencies. This is quite normal for plasma displays and these effects will disappear after the set has been turned on for some time. A plasma display consists of a high number of colour pixels. It is within industry standards that very few pixels (< 0.001%) may be defective, even for a new set. There is however no reason to doubt about the quality of the set. The plasma display technology operates with rare gases which are being influenced by air pressure. Up to an altitude of 2000 m above sea-level (local air pressure equal or above 800 hPa), the display is functioning fine. Operating the set at a higher altitude (lower air pressure), the picture becomes unstable and the picture performance is deteriorating. The plasma display might then also produce a humming sound. Bringing the set below 2000 m (local air pressure equal or above 800 hPa) it works fine again. Transportation has no influence.
Control of peripheral equipment	The infrared radiation of the screen may influence the reception sensitivity of other peripherals. Solution: replace the batteries of the remote control or change position of other equipment. E.g. keep away a wireless headphone from within a radius of 1,5 m.
Transport	Keep the original packaging to transport the monitor if needed.
Poor Picture	• Have you selected the correct TV system in the manual installation menu? • Is your TV or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc.? • Mountains or high buildings can cause double pictures or ghost images. Sometimes you can improve the picture quality by changing the direction of the aerial. • Is the picture or teletext unrecognisable? Check if you have entered the correct frequency. See Installation, Manual installation, p. 6. • Are brightness, sharpness and contrast out of adjustment? Select Factory settings in the Setup, General menu, p. 8.

No Picture	• Are the supplied cables connected properly ? (The aerial cable to the TV, the other aerial to your recorder, the VGA cables to the display, the power cables.) • Has the child lock been switched off ? • Is your PC switched on ? • Do you see a black screen and the indicator in front of the TV lights up green, this means that the display mode is not supported. Switch your VGA-source to a correct mode. • In case of weak or bad signal, consult your dealer.
Digital distortion	The low quality of some digital picture material may be the cause of digital image distortion. In this case select the Soft setting using the Picture menu, Smart Picture, without changing the picture settings manually.
No sound	• No sound on any channel? Check the volume isn't at minimum. • Is the sound interrupted with the mute key 🔇?
No solution found for your picture or sound problem ?	Switch your TV off and then on again once. Never attempt to repair a defective TV yourself. Check with your dealer or call a TV technician.
Menu	Have you selected the wrong menu? Press the **MENU** ▣ key again to exit from the menu.
NEXTVIEW	**Orange indicator on front of the TV during standby / No NEXTVIEW info:** See Acquisition and updating of NEXTVIEW information, p. 14. **Displayed time is wrong:** The broadcaster on programme number one does not transmit the correct local date and time. Use Reshuffle in the installation menu to place another broadcaster on programme number one.
Remote control	• Check if the remote control is in the correct mode. • If your TV no longer responds to the remote control, the batteries may be dead. • You can still use the **MENU/OK** key and the -/+ keys on top of your TV.
Standby	Your TV consumes energy in the standby mode. Energy consumption contributes to air and water pollution. Power consumption: 2 W.
No stable or not synchronised VGA picture	Check if you have selected the correct VGA mode in your PC. See the separate instruction manual with the monitor.
Miscellaneous	. Ambient temperature: + 5~ + 40°C . Maximum operating altitude: 2000 m / 6562 ft (min. air pressure 800 hPa) . Mains: AC 95-264V 50/60 Hz . Power consumption: around 290W . Standby consumption: < 2W . Weight (excl. packaging): Display: 35 kg . Dimensions (wxhxd): 107 x 66 x 9 cm . Wall mounting bracket included

ERRATUM



English

Supplied adaptor

Use the scart to cinch adaptor to connect temporary peripheral equipment (camcorder, digital camera, game boy,...) to **EXTERNAL 3**.

Note: do not connect the CVBS and Y/C connector of one device at the same time.

Deutsch

Mitgelieferter Adapter

Der Cinch auf Scart Adapter wird gebraucht, um periphere Geräte (Camcorder, Digital Kamera, Telespiel...) an **EXTERNAL 3** anzuschließen.

Anmerkung: Niemals den CVBS und Y/C Stecker eines Gerätes gleichzeitig einstecken.

Français

Adaptateur fourni

Utiliser l’adaptateur péritel/cinch pour connecter temporairement des appareils périphériques (camescopes, appareils photos numériques, consoles de jeu...) sur **EXTERNAL 3**.

Remarque: ne pas raccorder de câble CVBS et Y/C sur un appareil en même temps.

Nederlands

Bijgevoegde adapter

Gebruik de scart naar cinch adapter om tijdelijke randapparatuur (camcorder, digitale camera, game boy,...) aan te sluiten op **EXTERNAL 3**.

Opmerking: Sluit de CVBS en Y/C connector van één en hetzelfde randapparaat niet gelijktijdig aan.

3104 315 2278.2

Personal Notes:

4. Mechanical Instructions

Index of this chapter:
1. Service Positions
2. Assy / PWB Removal
3. Re-assembly

Notes:
- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order.

4.1 Service Positions

4.1.1 The Foam Bars

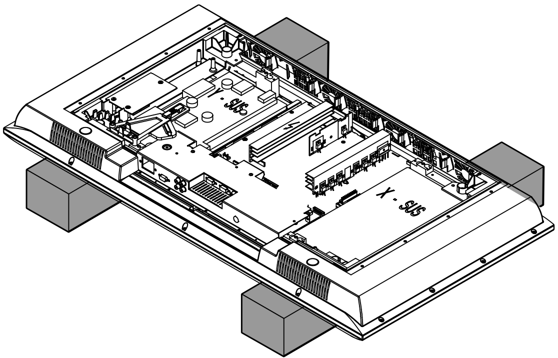


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Figure 4-1 Foam bars

To put the TV set in its service position place it upside down on a table top, use foam cushions or a protection sheet.
The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. By laying the plasma or LCD TV flat on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. By first placing a mirror flat on the table under the TV you can easily see if something is happening on the screen.
Caution: When using a sheet, the plasma screen can become very hot. Therefore, it is advised to use foam cushions

4.1.2 The Aluminium Stands

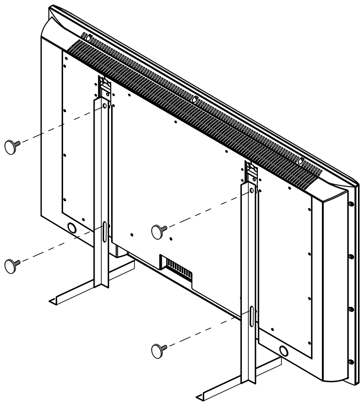

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Figure 4-2 Aluminium stands

The aluminium stands (order code 3122 785 90480 for two pieces) can also be used to do measurements and alignments, also they are very suitable to perform duration tests. With this stands the set does not take much space, has no risk of over heating, and/or falling. The stands can be mounted and removed quickly and easily with use of the provided screws, which can be tightened and loosened manually without the use of tools.
The stands are also handy to replace the screen.
Caution: Only use the screws provided, otherwise it is possible to damage the monitor inside.

4.2 Assy/PWB Removal

4.2.1 Metal Back Plate

Warning: Disconnect the mains power cord before you remove the rear cover.

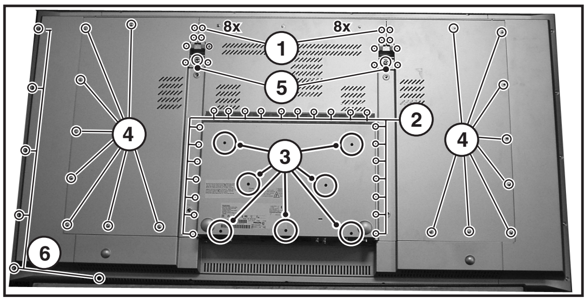

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Figure 4-3 Rear cover removal

Notes:
- It is not needed to remove the T8 screws (1) around and above the “stand holes”.
- It is also not needed to remove the T8 screws (2) around the SSB outer box.

1. Remove all T10 metric screws (3) from the centre part of the metal back plate.
2. Remove all T10 parker screws (4), some of them are indicated on the figure above.
3. Remove two T20 screws (5).
4. Lift the metal back plate from the cabinet. Make sure that wires and flat foils are not damaged during cover removal.

4.2.2 Small Signal Board

Small Signal Board (SSB) Box disassembly

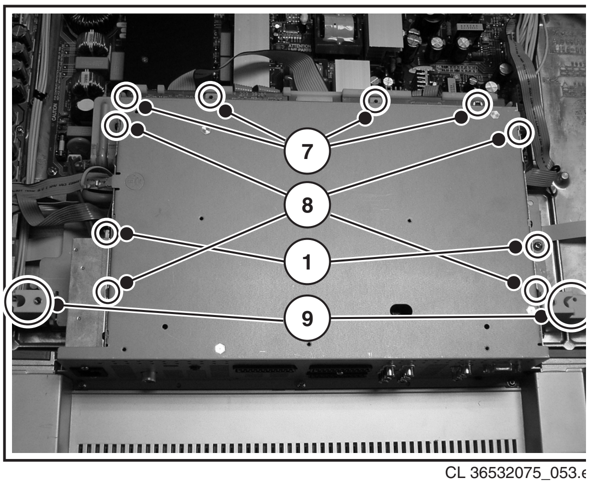

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Figure 4-4 SSB Box. Top view

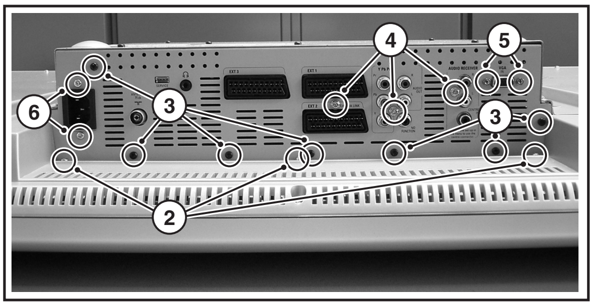

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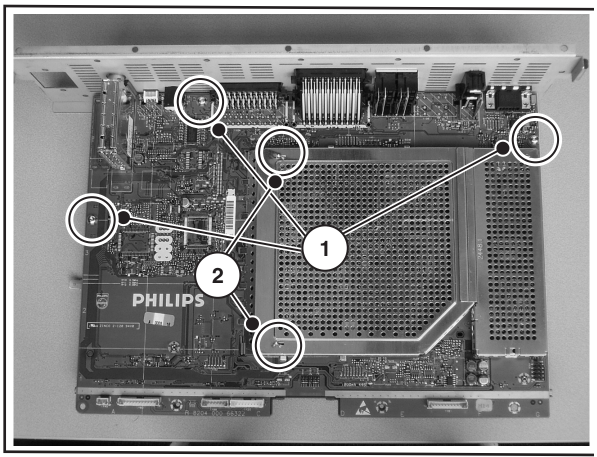
Figure 4-5 SSB Box. Front view

1. Release the AC input cables from the Plasma Panel and SSB.
2. Remove the two mounting screws (1) at the both sides of the SSB Box.
3. Remove all mounting screws (2) at the front side of the SSB Box.
4. Remove all metric screws (3) at the front side of the SSB Box.
5. Remove all parker screws (4) at the front side of the SSB Box.
6. Use a hex nut driver or pliers to remove both connector fixing screws (5) by the VGA connector.
7. Remove the two silver coloured metric mounting screws (6) by the mains cord.
8. Carefully turn upside-down the SSB Box. Remove the two mounting screws at the bottom side of the SSB box.
9. Turn the SSB Box back to the initial position. Release plastic clamps (7) at the topside of the SSB Box (see figure: "SSB Box. Top view"). Carefully use a flat screwdriver to release the metal clamps at the both sides of the SSB Box. Lift the shielding cover of the SSB Box.

SSB removal



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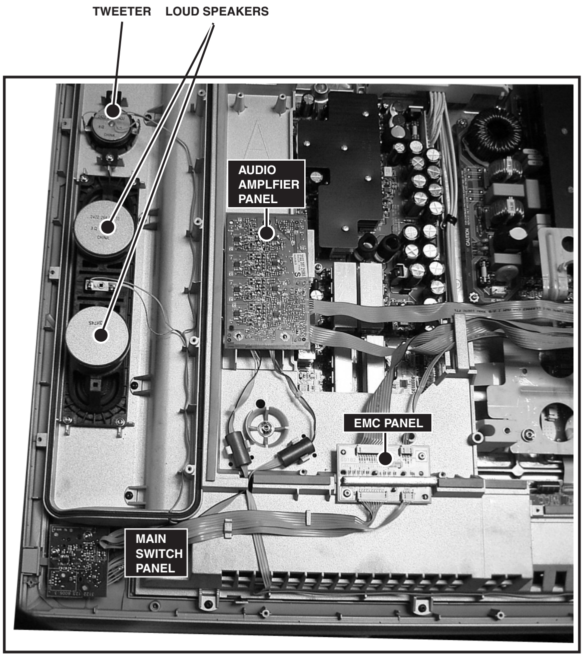
18110

Figure 4-6 SSB removal

1. Release all cable from the SSB.
2. Remove all mounting screws from the SSB (1).
3. Remove the SSB.

4.2.3 Audio Amplifier Panel



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181103

Figure 4-7 Speaker and panel removal

1. Disconnect all cables from the panel.
2. Remove the fixing screws from the panel.
3. Remove the panel.

4.2.4 EMC Interface Panel and Main Switch Panel

See figure "Speakers and panels removal".

Note: Before removing the EMC Interface Panel and Main Switch Panel you have to remove the plastic rear cover.
1. Remove all T10 parker screws (6) around edges of the plastic rear cover, some of them are indicated on figure "Rear cover removal".
2. Disconnect all cables from the panels.
3. Remove the fixing screws from the panels.
4. Remove the panels.

4.2.5 Plasma Panel

Make sure, that the power is switched "off" and that the necessary cables are disconnected.
Note: Before replacing the Plasma Panel, first remove SSB Box, Audio Amplifier Panel and EMC Interface Panel, as described above.
1. Remove the four PDP brackets, two of them are indicated (9) on the figure "SSB Box. Top view".
2. Remove all fixing screws from the Shielding Frame. Lift and remove the Shielding Frame.
3. Remove all fixing screws from the Plasma Panel. Lift and remove the Plasma Panel.

4.3 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Note: While re-assembling, make sure, that all cables are placed and connected in their original position

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

1. Test points
2. Service Modes
3. Problems and solving tips (related to CSM)
4. ComPair
5. Error Codes
6. The blinking LED procedure
7. Protections
8. Repair tips
9. Software downloading

5.1 Test Points

The chassis is equipped with test points printed on the circuit board assemblies.

Perform measurements under the following conditions:

- Service Default Mode.
- Video: colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements below) and the TV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version readout, and software upgrading.
Minimum requirements: a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph “ComPair”).

5.2.1 Service Default Mode (SDM)

Purpose

- To create a pre-defined setting, to get the same measurement results as given in this manual.
- To override SW protections.
- To start the blinking LED procedure.

Specifications

- Tuning frequency: 475.25 MHz for PAL/SECAM.
- Colour system: SECAM L for France or PAL B/G for the rest of Europe.
- All picture settings at 50 % (brightness, colour, contrast).
- All sound settings at 50 %, except volume at 25 %.
- All service-unfriendly modes (if present) are disabled, like:
  - (Sleep) timer.
  - Child/parental lock.
  - Blue mute.
  - Automatic volume limiter (AVL).
  - Auto switch-off (when no video signal was received for 10 minutes).
  - Skip/blank of non-favourite pre-sets.
  - Smart modes.
  - Auto store of personal presets.
  - Auto user menu time-out.

How to enter SDM

Use one of the following methods:

- Use the standard RC-transmitter and key in the code “062596”, directly followed by the “MENU” button.
  Note: It is possible that, together with the SDM, the main menu will appear. To switch it off, push the “MENU” button again.
- Short for a moment the two solder pads (item 9018) on the SSP, with the indication “SDM”. Activation can be performed in all modes, except when the set has a problem with the main microprocessor.
  Caution: If the SDM is entered via the pins, all the software-controlled protections are de-activated.
- Use the DST-emulation feature of ComPair.
- Use the “DEFAULT” button on the Dealer Service Tool (RC7150, this remote is no longer available).

After entering this mode, “SDM” will appear in the upper right corner of the screen.

How to navigate

When you press the “MENU” button on the RC transmitter, the set will toggle between the SDM and the normal user menu (with the SDM mode still active in the background).

How to exit SDM

Use one of the following methods:

- Switch the set to STANDBY via the RC-transmitter.
- Press the “EXIT” button on the DST.
- Via a standard customer RC-transmitter: key in “00”-sequence.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operation hours.
- To display (or clear) the error code buffer.

Specifications

- Operation hours counter.
- Software version.
- Option settings.
- Error buffer reading and erasing.
- Software alignments.

How to enter SAM

Use one of the following methods:

- Via a standard RC transmitter: key in the code “062596” directly followed by the “OSD [i+]” button. After entering SAM with this method a service warning will appear on the screen, you can continue by pressing any digit key on the RC.
- Short for a moment the two solder pads (item 9017) on the SSP with the indication "SAM". Depending on the software version, it is possible that a service warning will appear. You can continue by pressing any digit key on the RC.
- Use the DST-emulation feature of ComPair.
- Press the ALIGN button on the DST while the set is in the normal operation

After entering this mode, “SAM” will appear in the upper right corner of the screen.

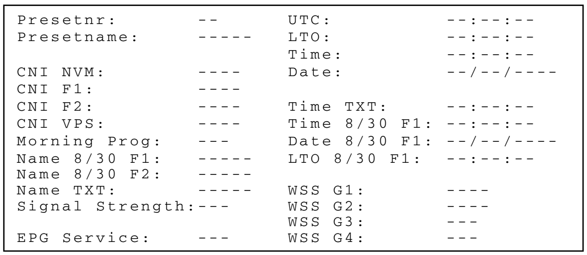
Contents of SAM:

- **OPERATION HOURS.** Displays the accumulated total of operation hours (not the standby hours).
- **HARDWARE INFO.**
  - **ROM VERSION.** Displays the date of the software and the software version of the ROM (**example:** TP11EU_1.0_01234 = AAAABB_X.Y_NNNNN).
    - **AAAA**= the chassis name.

  - **BB**= the region: EU= Europe, AP= Asia Pacific PAL/Multi, AN= Asia Pacific NTSC, US= USA, LT= LATAM.
  - **X.Y**= the software version, where X is the main version number (different numbers are not compatible with one another) and Y is the sub version number (a higher number is always compatible with a lower number).
  - **NNNNN**= last five digits of 12nc code software.
- **SW VERSION EPLD**. Displays the software version of the EPLD.

- **ERRORS.** (followed by maximal 10 errors). The most recent error is displayed at the upper left (for an error explanation see paragraph "Error Codes").
- **DEFECTIVE MODULE.** Here the module that generates the error is displayed. If there are multiple errors in the buffer, which are not all generated by a single module, there is probably another defect. It will then display the message "UNKNOWN" here.
- **RESET ERROR BUFFER.** When you press the "OK" button, the error buffer is reset.
- **ALIGNMENTS.** This will activate the "ALIGNMENTS" sub-menu.
- **DEALER OPTIONS.** Extra features for the dealers.
- **SERVICE OPTIONS.** Extra features for Service.
- **INITIALISE NVM.** When an NVM was corrupted (or replaced) in the former EM3 chassis, the microprocessor replaces the content with default data (to assure that the set can operate). However, all pre-sets and alignment values are gone now, and option numbers are not correct. Therefore, this was a very drastic way. In this chassis, the procedure is implemented in another way: The moment the processor recognises a corrupted NVM, the "initialise NVM" line will be highlighted. Now, you can do two things (dependent of the service instructions at that moment):
  - Save the content of the NVM via ComPair for development analysis, **before** initialising. This will give the Philips Service department an extra possibility for diagnosis (e.g. when Development asks for this).
  - Initialise the NVM (same as in the past, however now it happens conscious).
- **STORE.** All options and alignments are stored when pressing the "OK"-button
- **FUNCTIONAL TEST.** All devices are tested via the "OK" button. Eventual errors are displayed in the error buffer. The error buffer is not erased, the content returns when this test is terminated.
- **DAILY MENUS.** With the "OK" button, you can go to the normal user menu. SAM is still active in the background. With the "MENU" button, you return from the user menu to SAM menu. This feature can be helpful to quickly change some settings in the user menu.
- **SW MAINTENANCE.**
  - **UPGRADE.** More info see paragraph Software downloading.
  - **EVENTS.** Not useful for service purposes. In case of specific software problems, the development department can ask for this info.
  - **BDM INFO.** Broadcast Debug Menu info. The purpose of this menu is to debug the broadcast, **not** the TV. The menu gives an overview of what is received on the current preset.

Following items are displayed:



```
Presetnr:       --      UTC:          --:--:--
Presetname:     -----   LTO:          --:--:--
                        Time:         --:--:--
CNI NVM:        ----    Date:         --/--/----
CNI F1:         ----
CNI F2:         ----    Time TXT:     --:--:--
CNI VPS:        ----    Time 8/30 F1: --:--:--
Morning Prog:   ---     Date 8/30 F1: --/--/----
Name 8/30 F1:   -----   LTO 8/30 F1:  --:--:--
Name 8/30 F2:   -----
Name TXT:       -----   WSS G1:       ----
Signal Strength:---     WSS G2:       ----
                        WSS G3:       ---
EPG Service:    ---     WSS G4:       ---
```

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Figure 5-1 Broadcast debug menu overview.

Table 5-1 Broadcast debug menu explanation

Item	Source	Description
Presetnr	Set	Presetnumber of the current selected preset.
Presetname	Set	Presetname of the current selected preset.
CNI NVM	Broadcaster	CNI number stored in NVM for the current preset.
CNI F1	Broadcaster	CNI number from transmitted Packet 8/30 Format 1.
CNI F2	Broadcaster	CNI number from transmitted Packet 8/30 Format 2.
CNI VPS	Broadcaster	CNI number from transmitted VPS line.
Morning Prog	Broadcaster	"ARD" or "ZDF" according to dedicated bit in 8/30 Format 1.
Name 8/30 F1	Broadcaster	Name extracted from status message of 8/30 Format 1.
Name 8/30 F2	Broadcaster	Name extracted from status message of 8/30 Format 2.
Name TXT	Broadcaster	Name extracted from TXT header.
Signal Strength	FBX	Noise figure measured for selected preset.
EPG Service	Set	EPG Service stored in NVM for current preset displayed as "TXT", "MCP", "SCP", "OCP".
UTC	Set	UTC (Universal Time Code formerly known as Greenwich Mean Time) used in the set.
LTO	Set	LTO (Local Time Offset) used in the set. Used by EPG for all Nextview displays. (= Time TXT header - Time 8/30 F1)
Time	Set	Current time running in the set. Was extracted at startup, then maintained by software.
Date	Set	Current date running in the set. Was extracted at startup, then maintained by software.
Time TXT	Broadcaster	TXT header time from the selected preset.
Time 8/30 F1	Broadcaster	UTC time from 8/30 Format 1.
Date 8/30 F1	Broadcaster	Date from 8/30 Format 1.
LTO 8/30 F1	Broadcaster	LTO from 8/30 Format 1.
WSS G1	Broadcaster	WSS Group 1 (Aspect Ratio) bits 0 1 2 3
WSS G2	Broadcaster	WSS Group 2 (Enhanced Services) bits 4 5 6 7
WSS G3	Broadcaster	WSS Group 3 (Subtitles) bits 8 9 10
WSS G4	Broadcaster	WSS Group 4 (Reserved) bits 11 12 13

How to navigate

- In SAM, you can select the menu items with the “CURSOR UP/DOWN” key on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the “CURSOR UP/DOWN” key to display the next/previous menu items.
- With the “CURSOR LEFT/RIGHT” keys, it is possible to:
  - (De) activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.

How to exit SAM

Use one of the following methods:

- Press the “MENU” button on the RC-transmitter, or
- Switch the set to STANDBY via the RC-transmitter, or
- Press the “EXIT” button on the DST.

5.2.3 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer. The service technician can than ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severity of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.
The CSM is a read only mode; therefore, modifications in this mode are not possible.

How to enter CSM

Use one of the following methods:

- Press the “MUTE” button on the RC-transmitter **simultaneously** with the “MENU” button on the TV (top control) for at least 4 seconds.
- Key in the code “123654” via the standard RC transmitter.

Note: Activation of the CSM is only possible if there is no (user) menu on the screen!

How to navigate

By means of the “CURSOR-DOWN/UP” knob on the RC-transmitter, you can navigate through the menus.

Contents of CSM

CUSTOMER SERVICE MENU 1

- **SOFTWARE VERSION (example: TP11EU_1.0_01234).** Displays the built-in software version. In case of field problems related to software, software can be upgraded (for more details, see paragraph Software downloading). You will find details of the software versions in the chapter “Software Survey” of the “Product Survey - Colour Television” publication. This publication is generated four times a year.
- **SOFTWARE VERSION EPLD.** The 12NC-number of the built-in EPLD software.
- **FEATURE BOX.** The 12NC-number of the built-in Feature Box software.
- **SET TYPE.** This information is very helpful for a helpdesk/workshop as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of the TV-set.
- **CODE 1.** Gives the latest five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occurred error is displayed on the leftmost position. Each error code is displayed as a 3-digit number. When less than 10 errors occur, the rest of the buffer is empty (000). See also paragraph Error Codes for a description.
- **CODE 2.** Gives the first five errors of the error buffer. See also paragraph Error Codes for a description.
- **VOLUME.** Gives the last status of the volume as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Volume values can be changed via the volume key on the RC-transmitter.
- **BRIGHTNESS.** Gives the last status of the brightness as set by the customer. The value can vary from 0 (brightness is minimum) to 100 (brightness is maximum). Brightness values can be changed via the “CURSOR LEFT” and “CURSOR RIGHT” keys on the RC-transmitter after pressing the “MENU” button and selecting “PICTURE” and “BRIGHTNESS”.
- **CONTRAST.** Gives the last status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 100 (contrast is maximum). Contrast values can be changed via “CURSOR LEFT” and “CURSOR RIGHT” keys on the RC-transmitter after pressing the “MENU” button and selecting “PICTURE” and “CONTRAST”.

CUSTOMER SERVICE MENU 2

- **COLOUR.** Gives the last status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 100 (colour is maximum). Colour values can be changed via “CURSOR LEFT” and “CURSOR RIGHT” keys on the RC-transmitter after pressing the “MENU” button and selecting “PICTURE” and “COLOUR”.
- **HUE.** Only relevant for NTSC-signals (e.g. some NTSC-DVD-discs).
- **SHARPNESS.** Gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum). In case of bad antenna signals, a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the “CURSOR LEFT” and “CURSOR RIGHT” keys on the RC-transmitter after pressing the “MENU” button and selecting “PICTURE” and “SHARPNESS”.
- **HEADPHONE VOLUME.** Gives the last status of the headphone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Headphone volume values can be changed via the “CURSOR LEFT” and “CURSOR RIGHT” keys on the RC-transmitter after pressing the “MENU” button and selecting “SOUND” and “HEADPHONE VOLUME”.
- **SURROUND MODE.** Indicates the by the customer selected surround mode (or automatically chosen mode). Possible values are “OFF”, “INCREDIBLE SURROUND” OR “DOLBY VIRTUAL”. These settings can be influenced after pressing the “MENU” button and selecting “SOUND” and SURROUND MODE”. It can also have been selected automatically by signalling bits (internal software).
- **TUNER FREQUENCY.** Indicates the frequency the selected transmitter is tuned to. The tuner frequency can be changed via the “CURSOR LEFT” and “CURSOR RIGHT” keys for fine tune after opening the installation menu and selecting “INSTALL” and “MANUAL INSTALL”.
- **DIGITAL OPTION.** Gives the selected digital mode, “PROGRESSIVE SCAN”, “MOVIE PLUS” or “PIXEL PLUS”. Change via “MENU”, “PICTURE”, “DIGITAL OPTIONS”.
- **TV SYSTEM.** Gives information about the video system of the selected transmitter.
  - BG: PAL BG signal received.
  - DK: PAL DK signal received.
  - I: PAL I signal received.
  - L/La: SECAM L/La signals received.
  - M: NTSC M signal received with video carrier on 38.9 MHz.
- **BALANCE.** Indicates the balance settings, between “-50” and “+50”. Change via “MENU”, “SOUND”, and “BALANCE”. Not applicable for Dolby Pro Logic sets.

CUSTOMER SERVICE MENU 3

- **CENTRE MODE.** Indicates if centre mode is set “ON” or “OFF”. When centre mode is on, all TV speakers are used

as one centre speaker. Change Centre mode via “MENU”, “SETUP”, “SPEAKERS”, and “CENTRE MODE”.
- **DNR.** Gives the selected DNR setting (Dynamic Noise Reduction), “OFF”, “MINIMUM”, “MEDIUM”, or “MAXIMUM”. Change via “MENU”, “PICTURE”, “DNR”
- **NOISE FIGURE.** Gives the noise ratio for the selected transmitter. This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal). For some software versions, the noise figure will only be valid when “Active Control” is set to “medium” or “maximum”.
- **SOURCE.** Indicates which source is used and the video/audio signal quality of the selected source. (Example: Tuner, Video/NICAM) Source: “TUNER”, “EXT1”, “EXT2”, “EXT3”, “EXT4”, “SIDE”, “AV1”, “AV2”, “AV3” or “AV4”. Video signal quality: “VIDEO”, “S-VIDEO”, “RGB 1FH”, “YPBPR 1FH 480P”, “YPBPR 1FH 576P”, “YPBPR 1FH 1080I”, “YPBPR 2FH 480P”, “YPBPR 2FH 576P”, “YPBPR 2FH 1080I”, “RGB 2FH 480P”, “RGB 2FH 576P” or “RGB 2FH 1080I”. Audio signal quality: “STEREO”, “SPDIF 1”, “SPDIF 2”, or “SPDIF”.
- **AUDIO SYSTEM.** Gives information about the audio system of the selected transmitter: “ANALOGUE MONO”, “ANALOGUE STEREO”, “PCM 2/0”, “DD 1/0”, “DD 2/0 LtRt”, “DD 2/0 L0R0”, “DD 2/1”, “DD 2/2”, “DD 3/0”, “DD 3/1”, “DD 3/2”, “DD 1+1”, “MPEG 1/0”, “MPEG 2/0”, “MPEG 2/0 LtRt”, “MPEG 2/1”, “MPEG 2/2”, “MPEG 3/0”, “MPEG 3/1”, “MPEG 3/2”, “MPEG 1+1” or “MPEG 2+2”.
- **TUNED BIT.** Gives information about the tuning method of the stored pre-set. If a channel is found via “automatic installation”, you will see the value “YES”. When you change this (automatically found) frequency via “fine tune” adjustment (installation menu - manual installation), the displayed value will change to “NO”. Therefore, when you see the value “NO” in this line, it is an indication that the received channel is a non-standard signal (e.g. of a VCR).
- **SURROUND SPEAKERS.** Not applicable in this set.
- **ON TIMER.** Indicates if the “On Timer” is set “ON” or “OFF” and if the timer is “ON” also displays start time, start day and program number. Change via “MENU”, “TV”, “FEATURES”, and “ON TIMER”.
- **PRESET LOCK.** Indicates if the selected preset has a child lock: “LOCKED” or “UNLOCKED”. Change via “MENU”, “TV”, “FEATURES”, “CHILD LOCK”, and “CUSTOM LOCK”.
- **CHILD LOCK.** Indicates the last status of the general child lock: “UNLOCK”, “LOCK”, or “CUSTOM LOCK”. Change via “MENU”, “TV”, “FEATURES”, “CHILD LOCK”, and “LOCK”.

CUSTOMER SERVICE MENU 4
- **AGE LOCK.** Indicates the last status of the EPG rating for child lock: “OFF”, “4 YEARS”, “6 YEARS”, “8 YEARS”, “10 YEARS”, “12 YEARS”, “14 YEARS” or “16 YEARS”. This is only displayed if child lock is set to “CUSTOM LOCK”
- **LOCK AFTER.** Indicates at what time the child lock is set: “OFF” or e.g. “18:45” (lock time). This is only displayed if child lock is set to “CUSTOM LOCK”
- **CATEGORY LOCK.** Indicates the last status of the EPG theme childlock: “MOVIES”, “NEWS”, “SHOWS”, “SPORTS”, “CHILDREN”, “MUSIC”, “CULTURE”, or “SERIES”. This is only displayed if child lock is set to “CUSTOM LOCK”. It is possible that more than one value is shown.
- **PROGRAM CATEGORY.** Indicates the theme of the selected transmitter: “MOVIES”, “NEWS”, “SHOWS”, “SPORTS”, “CHILDREN”, “MUSIC”, “CULTURE”, or “SERIES”.
- **TV RATINGS LOCK.** Only applicable for US.
- **MOVIE RATINGS LOCK.** Only applicable for US.
- **V-CHIP TV STATUS.** Only applicable for US.
- **V-CHIP MOVIE STATUS.** Only applicable for US.
- **OPTIONS 1.** Gives the option codes of option group 1 as set in SAM (Service Alignment Mode).
- **OPTIONS 2.** Gives the option codes of option group 2 as set in SAM (Service Alignment Mode).

CUSTOMER SERVICE MENU 5
- **AVL.** Indicates the last status of AVL (Automatic Volume Level): “ON” or “OFF”. Change via “MENU”, “TV”, “SOUND”, “AVL”
- **DELTA VOLUME.** Indicates the last status of the delta volume for the selected preset as set by the customer: from “-12” to “+12”. Change via “MENU”, “TV”, “SOUND”, “DELTA VOLUME”.

How to exit CSM

Use one of the following methods:
- After you press a key on the RC-transmitter (with exception of the “CHANNEL”, “VOLUME” and digit (0-9) keys), or
- After you switch the TV-set “OFF” with the mains switch.

5.3 Problems and Solving Tips (related to CSM)

Note: Below described problems are all related to the TV settings (visible in the CSM menu). The procedures to change the value (or status) of the different settings are described above. New value(s) are automatically stored.

5.3.1 Picture Problems

Snowy/noisy picture
1. Check in CSM line NOISE FIGURE. In case the value is "127" or higher, and the value is also high on other programs, check the aerial cable/aerial system. For some software versions, the noise figure will only be valid when “Active Control” is set to “medium” or “maximum”.
2. Check in CSM lines SHARPNESS and NOISE FIGURE. In case the value of line SHARPNESS is "3" or "4" and the value of line NOISE FIGURE is high ("127" or higher), decrease the "Sharpness” value.

Picture too dark
1. Press “Menu”, “TV”, “Picture”, “Smart Picture”. In case the picture improves, increase the “Brightness” or the “Contrast” value. The new value(s) are automatically stored (in “personal” pre-set) for all TV channels.
2. Check in CSM line BRIGHTNESS and CONTRAST. If the value of these lines is low (< "10"), increase the “Brightness” or the “Contrast” value via the user menu.

Picture too bright
1. Press “Menu”, “TV”, “Picture”, “Smart Picture”. In case the picture improves, decrease the “Brightness” or the “Contrast” value. The new value(s) are automatically stored (in “personal” pre-set) for all TV channels.
2. Check in CSM lines BRIGHTNESS and CONTRAST. If the value of these line is high (> 50), decrease the “Brightness” value or increase the “Contrast” value via the user menu.

White line around picture elements and text
1. Press “Menu”, “TV”, “Picture”, “Smart Picture”. In case the picture improves, decrease the “Sharpness” value. The new value is automatically stored (in “personal” pre-set) for all TV channels.
2. Check in CSM line “Sharpness”. If the value is high, decrease it. The new value is automatically stored for all TV channels.

No picture

Check in CSM line TUNED BIT. In case the value is “No”, install the required program again. Open the installation menu and perform manual installation.

No picture

No proper signal is received. Check the aerial cable/aerial system.

No picture or unstable picture
A scrambled or decoded signal is received.

Black and white picture
Check in CSM line COLOUR. In case the value is low (< "10"), increase the “Colour” value via the user menu. The new value is automatically stored for all TV channels.

No colours/colour lines around picture elements or colours not correct or unstable picture
1. Check in CSM line TV SYSTEM. If a “strange” system pops up, something has gone wrong during installation. Re-install the channel.
2. If in CSM line TV SYSTEM is “L”, the installed system for this pre-set is “France”, while “West Europe” is required. Install the required program again: open the installation menu and perform manual installation. Select system “West Europe”.

Menu text not sharp enough
1. Press “MENU”, “TV”, “PICTURE”, “SMART PICTURE”. In case picture improves, decrease the contrast value. The new value(s) are automatically stored for all TV channels.
2. Check line “Contrast”. The value is high (> 50). Decrease the contrast value.

5.3.2 Sound Problems

No sound from left and right speaker
Check line “Volume”. The value is low. Increase the value of “Volume”. The new value(s) are automatically stored (in “personal” pre-set) for all TV channels.

Sound too loud for left and right speaker
Check line “Volume”. The value is high. Decrease the value of “Volume”. The new value(s) are automatically stored (in “personal” pre-set) for all TV channels.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:
- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based faultfinding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector.

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:
- Automatic (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I2C level. ComPair can access the I2C bus of the television. ComPair can send and receive I2C commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extends. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some **additional features** like:
- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the Dealer Service Tool (DST).
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Mono-carrier.
  - Click on the “Panel” hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the “Schematic” hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 Stepwise Start-up

Under normal circumstances, a fault in the power supply, or an error during start-up, will switch the television to protection mode. ComPair can take over the initialisation of the television. In this way, it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem. Take notice that the transition between two steps can take some time, so give the set some time to reach a stable state. During the transition time, the LED can blink strangely.

Stepwise start- up explanation
This is realised via ComPair and is very helpful when a **protection** is activated (see also chapter “Protections”). The following diagram shows the start-up procedure of the set. Every step of the stepwise start-up (also called trapped start-up) in the diagram corresponds with the number of times the led blinks.

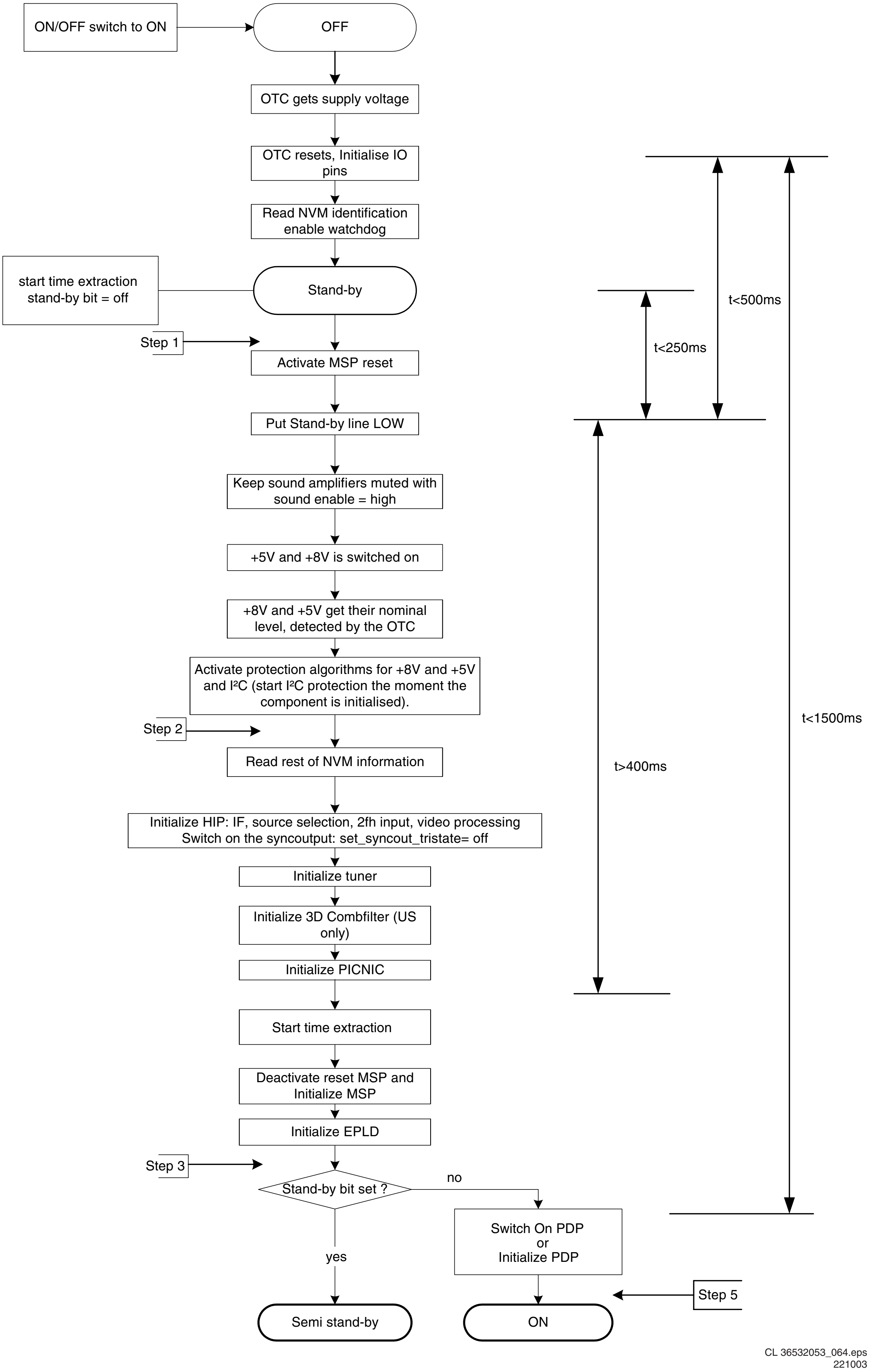

ON/OFF switch to ON
OFF
OTC gets supply voltage
OTC resets, Initialise IO pins
Read NVM identification enable watchdog
start time extraction stand-by bit = off
Stand-by
Step 1
Activate MSP reset
Put Stand-by line LOW
Keep sound amplifiers muted with sound enable = high
+5V and +8V is switched on
+8V and +5V get their nominal level, detected by the OTC
Activate protection algorithms for +8V and +5V and I²C (start I²C protection the moment the component is initialised).
Step 2
Read rest of NVM information
Initialize HIP: IF, source selection, 2fh input, video processing Switch on the syncoutput: set_syncout_tristate= off
Initialize tuner
Initialize 3D Combfilter (US only)
Initialize PICNIC
Start time extraction
Deactivate reset MSP and Initialize MSP
Initialize EPLD
Step 3
Stand-by bit set ?
no
yes
Switch On PDP or Initialize PDP
Step 5
Semi stand-by
ON
t<500ms
t<250ms
t>400ms
t<1500ms
CL 36532053_064.eps
221003

Figure 5-2 Stepwise start-up diagram.

Note (*):

- When the set is in stepwise mode and, due to stepping-up, a protection is activated, the set will really go into protection (blinking LED). The set will not leave the stepwise-mode however. If state X is the state where the set went to protection, stepwise start-up will return to state X-1. At state (X-1) diagnostic measurements can be performed. Also, in the short time the set is in state X but not yet in protection, you can also do some measurements.

5.4.4 How To Connect

1. First, install the ComPair Browser software (see the Quick Reference Card for installation instructions).
2. Connect the RS232 interface cable between a free serial (COM) port of your PC and the PC connector (marked with “PC”) of the ComPair interface.
3. Connect the mains adapter to the supply connector (marked with “POWER 9V DC”) of the ComPair interface.
4. Switch the ComPair interface “OFF”.
5. Switch the television set “OFF” with the mains switch.
6. Connect the ComPair interface cable between the connector on the rear side of the ComPair interface (marked with “I2C”) and the ComPair connector at the rear side of the TV.
7. Plug the mains adapter in a mains outlet, and switch the interface “ON”. The green and red LEDs light up together. The red LED extinguishes after approx. 1 second while the green LED remains lit.
8. Start the ComPair program and read the “Introduction” chapter.

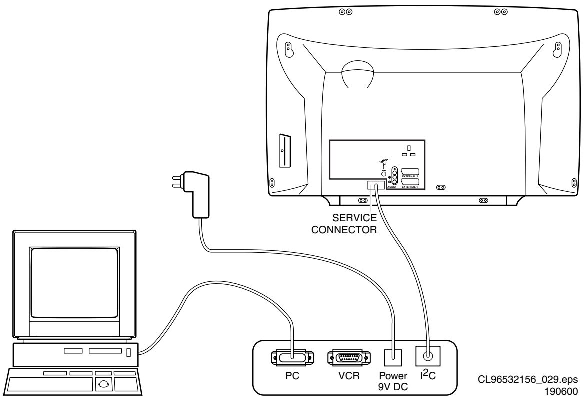


Figure 5-3 ComPair interface connection

5.4.5 How To Order

ComPair order codes (EU/AP/LATAM):

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excluding transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002, 3122 785 60110 (year 2003).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003).
- ComPair interface cable: 3122 785 90004.
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer Europe: 4822 727 21632.
- Transformer UK: 4822 727 21633.

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

5.5.1 Introduction

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right, new errors are logged at the left side, and all other errors shift one position to the right.
When an error has occurred, the error is added to the list of errors, provided the list is not full or the error is a protection error.
When an error occurs and the error buffer is full, then the new error is not added, and the error buffer stays intact (history is maintained), except when the error is a protection error.
To prevent that an occasional error stays in the list forever, the error is removed from the list after 50+ operation hours.
When multiple errors occur (errors occurred within a short time span), there is a high probability that there is some relation between them.

5.5.2 How to read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only if you have a picture). Examples:
  - **0 0 0 0 0**: No errors detected
  - **6 0 0 0 0**: Error code 6 is the last and only detected error
  - **9 6 0 0 0**: Error code 6 was first detected and error code 9 is the last detected error
- Via the blinking LED procedure (when you have no picture). See next paragraph.
- Via ComPair.

5.5.3 How to clear the Error Buffer

Use one of the following methods:

- By activation of the “RESET ERROR BUFFER” command in the SAM menu.
- With a normal RC, key in sequence “MUTE” followed by “062599” and “OK”.
- When you transmit the commands “DIAGNOSE” - “99” - “OK” with ComPair (or with a DST).
- If the content of the error buffer has not changed for 50+ hours, it resets automatically.

5.5.4 Error Codes

In case of non-intermittent faults, clear the error buffer before you begin the repair. This to ensure that old error codes are no longer present. Before clearing the buffer, write down the content, as this history can give you significant information.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).
There are various errors:

- I2C device errors.
- I2C bus errors.
- Protection errors.
- Errors not related to an I2C device, but of importance:
  - **FALCONIC (ERROR 26):** at start-up, after initialisation of the PICNIC, the presence of the FALCONIC can be checked.
  - **EAGLE (ERROR 27):** at start-up, after initialisation of the PICNIC, the presence of the Eagle can be checked.

Table 5-2 Error Code Table

Error	Device	Description	Def. item	Def. Module indication	Diagr.
1	M24C32	NVM, spontaneous blinking error 1	7011	Control	B5a
3	SAA4978	PICNIC	7713	Feature Box	B3a
4	Supply 5 V	5V protection	/	+5V Supply	B5a
5	Supply 8 V	8V protection	/	+8V Supply	B5a
6	Slow I2C bus blocked	Spontaneous blinking error 6	/	Slow I2C Blocked	/
8	TDA932x	HIP High-end Input Processor	7323	Chroma IF IO	B2
13	UV1318/...	Tuner protection	1T01	Tuner	B13
14	MSPxxxx	ITT sound processor	7A02	Audio module	B6a
18	Fast I2C bus blocked	Spontaneous blinking error 18	/	Fast I2C Blocked	/
21	M62320P	I/O Expander	7P56	Video Dual Screen	B15b
26	SAA4992	Falconic	7718	+3V (FBX) Supply	B3b
27	T8F24EF	Eagle	7724	+3V (FBX) Supply	B3c
32	M29W400BT	Flash Ram (EPG)	7012	EPG Memory	B5a
53	AD9883A	AD converter 2fh input	7L01	HD	B19c
55	3V3_PDP	One of the voltages is not ok + protection error	/	Supply	/
56	EPLD	EPLD error	7V01	Video control	B19d,f
76	Audio Amplifier	Audio DC protection	-	-	A
83	TEA6422	Source select matrix audio	7I17	Audio Source Select	B14d

Note:
- Error codes 1, 6, or 18 are protection codes and in this case, supplies of some circuits will be switched “OFF”. Also, in protection, the LED will blink the number of times equivalent to the most recent error code.

5.6 The Blinking LED Procedure

5.6.1 Introduction

Via this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful for fault finding, when there is no picture.

When the SDM is entered, the front LED will show (blink) the contents of the error-buffer. Error-codes > 10 are shown as follows:
- A long blink of 750 ms (which is an indication of the decimal digit),
- A pause of 1.5 s,
- “n” short blinks (where “n” = 1 - 9),
- When all the error-codes are displayed, the sequence finishes with a LED blink of 3 s,
- The sequence starts again.

Example: Error 12 9 6 0 0.
After activation of the SDM, the front LED will show:
- 1 long blink of 750 ms (which is an indication of the decimal digit) followed by a pause of 1.5 s,
- 2 short blinks followed by a pause of 3 s,
- 9 short blinks followed by a pause of 3 s,
- 6 short blinks followed by a pause of 3 s,
- 1 long blink of 3 s to finish the sequence,
- The sequence starts again.

Note: If errors 1, 6, or 18 occur, the LED always gives the last occurred error even if the set is NOT in service mode.

5.6.2 How to Enter

Use one of the following methods:
- Enter the SDM (only via soldering pads marked “SDM” on SSP). The blinking front LED will show the entire contents of the error buffer (this works in “normal operation” mode and in “protection” mode).
- Transmit the commands “MUTE” - “062500” - “OK” with a normal RC. The complete error buffer is shown. Take notice that it takes some seconds before the blinking LED starts.
- Transmit the commands “MUTE” - “06250x” - “OK” with a normal RC (where “x” is a number between 1 and 5). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... Take notice that it takes some seconds before the blinking LED starts.
- “DIAGNOSE X” with the DST (where “x” is a number between 1 and 5). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... When x = 0 all errors are shown.

5.7 Protections

5.7.1 Introduction

This chassis has only one microprocessor (OTC), which remains active during Standby. This because power of the microprocessor and the attached memory chip set is coming from the 3V3 supply, which is derived from the 5V Standby-circuitry. Therefore, in both Power-on as in Standby mode, the microprocessor is connected to this power supply.

If a fault situation is detected, an error code will be generated and if necessary, the set is put in protection mode. The protection mode is indicated by the blinking of the front LED at a frequency of 3 Hz (or by a coded blinking in special cases).

The content of the error buffer can be read via the service menu (SAM), the blinking LED procedure or via DST/ComPair.

To get a quick diagnosis, this chassis has three service-modes implemented:
- The **Customer Service Mode** (CSM).
- The **Service Default Mode** (SDM). Start-up of the set in a predefined way.
- The **Service Alignment Mode** (SAM). In this mode, items of the set can be adjusted via a menu.

You can enter both SDM and SAM modes via the “service pads” on the SSP, via an RC-transmitter (DST or standard RC), or via ComPair. It is not possible to enter the SAM in “standby”; the TV has to be in “normal operation” mode.

The “Protection Diagram” shows the structure of the protection system. See diagram below.

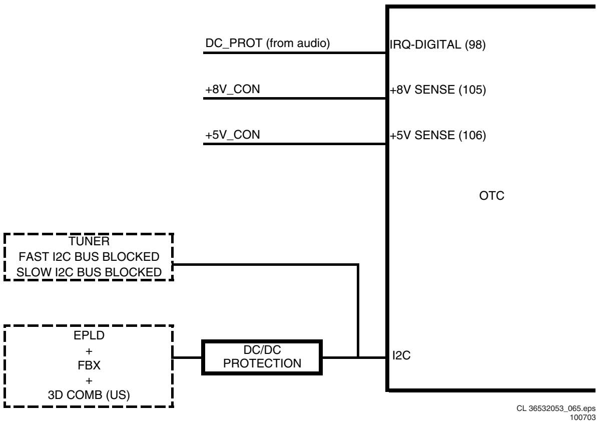


Figure 5-4 Protection diagram.

There are several types of protections:

- I2C related protections.
- OTC related protections (via polling on I/O pins or via algorithms).
- Hardware protection

All protections are explained below.

5.7.2 I2C Related Protections

In normal operation, some registers of the I2C controlled ICs are refreshed every 200 ms. During this sequence, the I2C busses and the I2C ICs are checked.
An I2C protection will take place if the SDA and SCL lines are short-circuited to ground, or to each other. An I2C error will also occur, if the power supply of the IC is missing.
3V3_PDP protection: When the 3V3 supply is short-circuited or interrupted the set switches off and goes into protection. The FBX, EPLD IC and 3D comb (US only) have no supply voltage and give no acknowledge. In this case the set should go into protection. An error code is written in the NVM: 3V3_PDP error.
FBX protection: the FBX protection is not available anymore.

5.7.3 OTC Related Protections

If a protection is detected at an OTC input, the OTC will start to scan all protection inputs every 200 ms for 5 times. If the protection on one of the inputs is still active after 1 s, the microprocessor will put the set in the protection mode. Before the scanning is started, a so-called “ESD refresh” is carried out. This is done, because the interrupt on one of the inputs is possibly caused either by a flash or by ESD. As a flash or ESD can influence IC settings, the HIP, MSP, 3D Comb (US only) and wireless module (not used in this set) are initialised again, to ensure the normal picture and sound conditions of the set.

8 V and 5 V protections: The microprocessor senses the presence of the 8 V and 5 V (via the “+5V_CON” and “+8V_CON” lines). If one (or both) of these voltages is (are) not present, an error code is stored in the error buffer of the NVM, and the set is put in the protection mode.

Audio DC protection: The OTC senses if the audio module is in protection via IRQ-DIGITAL (pin 98 of OTC). If this is the case, the OTC puts the set in protection.

5.7.4 Hardware Protection

Short-circuiting the 3V3 supply from the PDP will bring the TV in protection mode. The absence of the 3V3 supply line is also sensed via I2C and will be mentioned in the error overview.

5.8 Repair tips

5.8.1 3V3 Supply

As mentioned above, the 3V3 supply is switched “off” when something goes wrong (detection of a missing 3V3 supply at one of the devices supplied by the 3V3). Because of this, the set goes to protection (I2C protection). Error code 55 is logged. For further diagnoses of the SSB, you need to overrule the I2C protection: put the set in Service Default Mode by means of the solder pads on the SSB. Connect an external 3V3 supply at connector 1Y81 (B20) and make sure the current is limited to approximately 1200 mA. If the supplied current exceeds 1100 mA (approximately normal working current) you can conclude that one of the devices supplied by 3V3 is short-circuited on the SSB. If the current does not exceed 1100mA the supply of the PDP is defective.

5.8.2 ComPair

This chassis does not have an IR transmitting LED (as in MG-sets). Therefore, a “Service” (ComPair) connector is implemented at the rear side of the set, which is directly accessible (as in A10-, EM2E-, EM3E and EM5E-sets). In addition to this, there is also a blinking LED procedure to show the contents of the error buffer.

When you use ComPair, you have the possibility to activate a “stepwise start-up” mode. With this mode, you can initiate the start-up sequence step by step. This also means that in certain steps, some protections are not activated. This is sometimes very convenient during repair.

5.8.3 Protections

Activating SDM via the “service pads” will overrule the processor-controlled protections, but not the hardware protections. This means, that the A/D-input protections (5 and 8 V) and the I2C “not-acknowledging” info of FBX + EPLD + 3D Comb (US) and of the tuner are overruled.
Caution: When doing this, the service technician must know what he is doing, as it could lead to damaging the set.

5.8.4 Power Supply

The power supply is part of the PDP display which is not described in this manual. However for normal operation at least +9V-STBY and +9V-STBY-SW must be available, both are available on connector 1Y82 of SSB. When this is valid the standby voltage +5V2-DISP must be available otherwise OTC is not powered.

Table 5-3 Repair tips

Phenomenon	Possible Cause	Repair tip
No picture, LED blinking at 3 Hz.	Set is in protection due to various causes. For error codes see error-code list.	You have no picture, so: Read the error buffer via ComPair (error buffer is accessible when set is in protection, compare-file will guide you to this) Read the blinking LED information via standard remote command <mute>06250x<ok>. Or you read the error code sequence via standard remote command <mute>062500<ok>. When you have found the error, check the circuitry related to the supply voltage and I2C-communication or the circuitry that triggers the protection.
No picture, LED blinking with code 6-6-6 or 18-18-18.	No communication on slow I2C- or fast I2C-bus.	As processor cannot communicate with one of the 2 busses it the standby-led spontaneously starts blinking 6-6-6-etc or 18-18-18-etc... If in the error buffer somewhere is an error 6 or 18, these will have the highest priority starting the mentioned blinking. Measure dependent of the error on the I2C-bus which device is loading the bus. (Use I2C-overview)
No picture, LED blinking with code 1-1-1.	No communication on NVM-I2C bus to the uP.	As the uP cannot communicate with the NVM I2C bus, it spontaneously starts blinking 1-1-1. **Note:** when there is no access to the NVM, a lot of picture setting can go wrong.
No RC-reception. LED does not echo RC-commands.	uP circuitry or RC-receiver is defective.	In case the set does react on a local keyboard operation, you must check the RC-receiver circuitry (diagram LD).
Picture is not synchronised.	The sync is derived in the HIP.	Check crystals in the HIP circuit on bad contacts.
Picture is distorted.	Check video-path in Service Default Mode.	Investigate whether there is an error code present in the error buffer. In case there is one, check the I2C-bus and/or supply lines (see overview supply lines). Measure and check signal path Tuner-HIP-FBX-EPLD.
Picture with horizontal stripes.	Pixel Plus processing is malfunctioning.	Check functionality on circuitry (B3a, B3b, and B3c) of PICNIC (7713), FALCONIC (7718, EAGLE (7724) and/or field memories (7714, 7717, 7719, 7722 and 7723. **Tip:** the whole Pixel Plus chipset (3 ICs + 5 Field Memories) can be diagnosed via ComPair.
No menu, no OSD.	Probably a defective uP.	Measure test points B61to B64 on diagram B5A.
No NextView (EPG).	IC7012 defective or not powered.	Check circuitry around IC7012 on diagram B5A.
No Teletext.	IC7007 defective or not powered.	Check circuitry around IC7007 on diagram B5A. Check also B61 to B64 around uP on diagram B5A.
Problems caused by EPG (Electronic Program Guide). The TV set "hangs".	Problems with NexTView EPG broadcasts.	To switch from EPG 2C3 to Teletext guide. Press for 4 seconds, simultaneously the Menu button on the TV and digit 0 on the remote. The option settings for NexTView type and Flashram will not change.
NexTView EPG is not functioning only Teletext guide.	EPG version 2C3 is switched off during production.	To switch from Teletext guide to EPG 2C3. Press for 4 seconds, simultaneously the Menu button on the TV and digit 1 on the remote. The option settings for NexTView type and Flashram will not change.
Various symptoms, due to missing local supply voltage.	An interrupted fuse, NFR-resistor or connection.	When no symptom or error code leads you to a specific circuitry, use the supply lines overview (see supply lines overview), for a quick scan of all supply lines.

5.9 Software Downloading

In this chassis, you can **upgrade** the software via ComPair without removing the back cover of the set. The switch, which is needed for the software downloading procedure, can be reached through the cooling gaps of the back cover. The switch is located next to the SAM/SDM pads and can be operated with a long and thin screwdriver. Make sure that you do not damage the PWB with sharp objects. You can find more information on how this procedure works in the ComPair file. It is possible that not all sets are equipped with the hardware, needed to make software upgrading possible. To speed up the programming process the firmware of the ComPair interface can be upgraded. See paragraph “How To Order” for the order number

8. Electrical Alignments

Index of this chapter:

1. General alignment conditions
2. Hardware alignments
3. Software alignments
4. Option settings

8.1 General Alignment Conditions

8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V_ac / 50 Hz (± 10 %).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 20 to 30 minutes.
- Measure voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
  Caution: never use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.1.2 Initial Settings

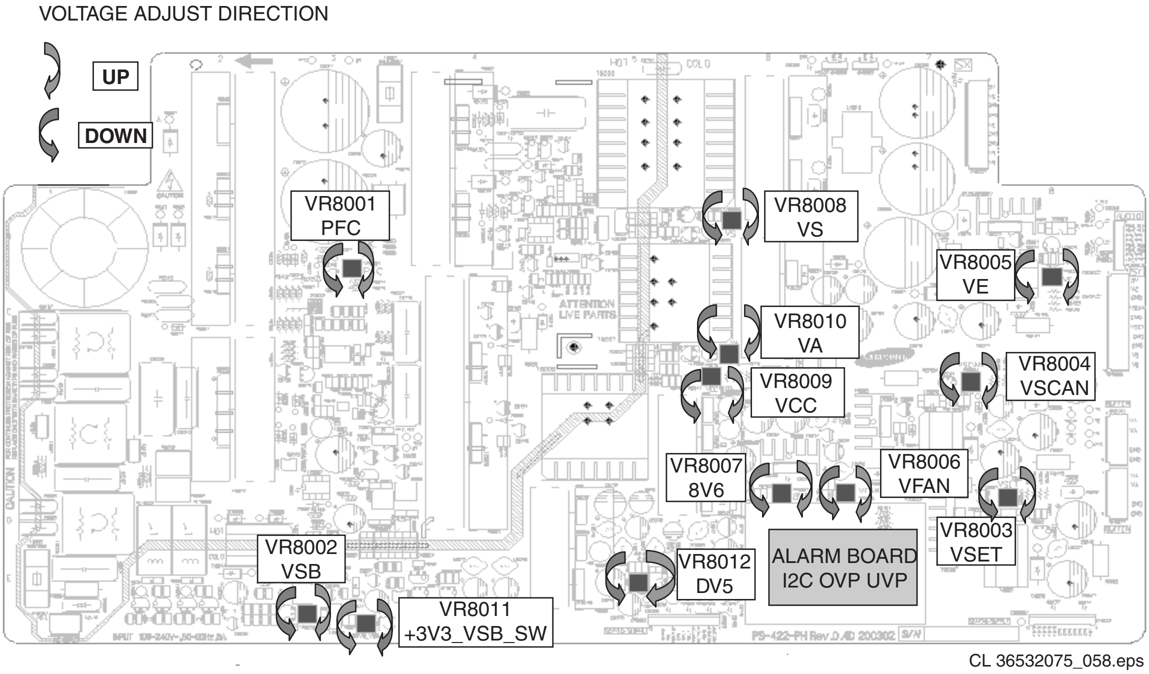
Perform all electrical adjustments with the following initial settings (via the "Active Control" button on the RC):

1. To avoid the working of the lightsensor, set "Active Control" to "Off".
2. Set "Smart Picture" to "Natural".
3. Set "Active Display" to "Off".
4. Set contrast to max (100).

8.2 Hardware Alignments

There are no alignments needed, except in case the PDP has been exchanged or the PDP-supply has been exchanged. In that case both must be matched.

Va	**Vsc**	**Vs**	**Ve**	**Vset**		**REMARKS**
Variable	Variable	Variable	Variable	Variable		Variable per set
VSB	**+3.3SBSW**	**Vcc**	**D5V**	**8V6**	**VFAN**	
5.2V	3.3V	3.3V	5.2V	8.6V	12V	Fixed for all sets



CL 36532075_058.eps
211103

Figure 8-1 Supply Alignment

Procedure:

- See figure above.
- The six potmeters influencing VSB, +3V3_VSB_SW, VCC, D5V, 8V6, and VFAN are not critical for matching. In case of doubt values can be checked versus mentioned voltages.
- The five potmeters VS, VA, VSET, VE, and VSCAN have to be matched with the values displayed on the PDP-label.
- Start with aligning potmeter VR8008 to adjust VS and then respectively VR8010 (VA), VR8003 (VSET), VR8005 (VE), and VR8004 (VSCAN).
- To double check, repeat whole sequence again, to check the correct value.

8.3 Software Alignments

Put the set in SAM mode (see the "Service Modes, Error Codes and Fault Finding" section). The SAM menu will now appear on the screen. Select ALIGNMENTS and go to one of the sub menus. The alignments are explained below.

Notes:

- All changes must be stored manually.
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default values.

8.3.1 GENERAL

LUMA GAIN

Fixed setting of "2".

IF AFC

Supply, via a service generator or via off-air, a PAL B/G TV-signal with a signal strength of at least 1 mV and a frequency of 475.25 MHz. Alignment procedure:

1. During the IF AFC-parameter adjustment, one can see OSD feedback on the screen.
2. The OSD feedback at the top of the screen can give 4 kinds of messages:
   1. The first item (IN/OUT) informs you whether you are in or out of the AFC-window.
   2. The second item (HIGH/LOW) informs you whether the AFC-frequency is too high or too low.
   3. Adjust the IF AFC parameter until the **first** value is within the AFC window (= IN).
   4. Next, adjust the IF AFC parameter until the **second** value is LOW.

Table 8-1 AFC OSD feedback of AFC alignment

AFC-window	AFC-frequency vs. reference
Out	High
In	High
[In]	[Low]
Out	Low

IF LPRIME AFC

Same procedure as described above, but with other signal source (SECAM L').

TUNER AGC

1. Connect the RF output of a video pattern generator to the antenna input.
2. From the generator, input a PAL B/G TV signal with a signal strength of approximately 2 mV and a frequency of 475.25 MHz.
3. Measure the DC voltage on pin 1 of the (main) Tuner. You can adjust this voltage by adjusting the TUNER AGC item in the SAM menu. Alignment is correct when the DC voltage is just below 3.5 V.

BLEND INTENSITY

Use this alignment when you replace the microcontroller, NVM, or the EBILD. It aligns the level of transparency of the menu-picture blended into the main-picture. Fixed setting of "16".

FBX TESTPATTERN

This function makes it possible to generate a test pattern varying from full black to full white in eight steps. You can use this pattern to check the video path, starting at the FBX to the plasma display. The pattern is generated by the Eagle (IC7724) for PixelPlus sets, or by the PICNIC (IC7713) for non-PixelPlus sets.

Note: This test pattern can also be very useful for checking the display for pixel failures.

8.3.2 2FH ADC ALIGNMENT

Only necessary to align, when the EPLD or NVM is replaced. Use the default values as mentioned in the table.

Table 8-2 2fH ADC alignment

Menu item	Alignment value
RED GAIN RGB	111
BLUE GAIN RGB	117
GREEN GAIN RGB	157
RED OFFSET RGB	59
BLUE OFFSET RGB	52
GREEN OFFSET RGB	46
RED GAIN YPBPR	111
BLUE GAIN YPBPR	117
GREEN GAIN YPBPR	137 ("GREEN GAIN RGB" minus "20")
RED OFFSET YPBPR	59
BLUE OFFSET YPBPR	52
GREEN OFFSET YPBPR	46

8.3.3 White point alignment

Table 8-3 Default values white point alignment.

Menu item	Alignment value
Test Pattern	NO / YES (no function)
WhitePointRed	127 (depends on color temperature)
WhitePointGreen	127 (depends on color temperature)
WhitePointBlue	127 (depends on color temperature)
Red BL offset	7
Green BL offset	7
Color Temperature	NORMAL / WARM / COOL

Ignore “Test Pattern” item in the alignment menu, this is not implemented.

Method 1 (with colour analyser)

1. Supply, via an external VGA source (e.g. a PC with 640x480 mode, or a VGA generator), a 'White Drive' test pattern (ask your NSO). This picture consists of a black picture with in the middle a 100% white square.
2. Select the color temperature to adjust (default NORMAL).
3. Measure with a CTV colour analyser (calibrated with the spectra) on the centre of the white square on the screen.
4. Adjust with the CURSOR UP/DOWN or LEFT/RIGHT command, the three white points Red, Green and Blue. Max. value is 127. Align with one or two of the drivers to the correct coordinates (see table of color coordinates).
5. Repeat the same measurement for respectively colour temperature WARM and COOL.

Table 8-4 Color coordinates

Color Temperature	x	y
6500 Warm	0.313	0.329
9400 Normal	0.285	0.290
11500 Cool	0.269	0.289

Method 2 (without colour analyser)

Without a CTV colour analyser, it is possible to set some parameters, which are based on average values from production.

Table 8-5 Color temperature RGB values

Color Temperature	R	G	B
6500 Warm	127	119	107
9400 Normal	127	122	124
11500 Cool	119	125	127

8.3.4 LUM. DEL.

With this Luminance Delay alignment, you place the luminance information exactly on the chrominance information (brightness is pushed onto the colour). Use a colour bar / grey scale pattern as test signal.

- **LUM. DELAY PAL BG:** Apply a PAL BG colour bar / grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "8".
- **LUM. DELAY PAL I:** Apply a PAL I colour bar/grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "8".
- **LUM. DELAY SECAM:** Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "7".
- **LUM. DELAY BYPASS:** apply a NTSC colour bar/ greyscale pattern as a test signal. Adjust this value until the transients of the colour and black and white part of the test area are at the same position. Default value is "6".

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of I2C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence / absence of these specific ICs (or functions) is made known by the option codes.

Notes:

- After changing the option(s), save them with the STORE command.
- The new option setting is only active after the TV is switched "off" and "on" again with the Mains switch (the EAROM is then read again).

8.4.2 DEALER OPTIONS

Table 8-6 Dealer Options Overview

Menu name	Subjects	Options	Physically in set
Personal Options	Picture Mute	Yes	Picture mute active in case no picture detected
		No	Noise in case of no picture detected
	Virgin Mode	Yes	TV starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
		No	TV does not starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
	Auto Store Mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	TXT Preference	TOP	Preference to TOP Teletext
		FLOF	Preference to FLOF Teletext

8.4.3 SERVICE OPTIONS

Select the sub menu's to set the initialisation codes (options) of the set via text menus.

Table 8-7 Option overview

Menu-item	Subjects	Options	Description
Chassis/Region	Region	AP	Only for AP.
		Europe	Only for Europe
Teletext	Flash RAM	Yes	Flash RAM present
		No	Flash RAM not present
	NexTView	None	Feature not present
		Textguide only	Feature present, but only as text guide.
		Nextview 2	Feature present, for countries that support this.
		Nextview 2c3	Feature present, for countries that support this.
Display Options	Display Technology	PDP	"Grayed out" in menu, fixed value.
	Size	37"	Panel size (in inches).
		42"	Panel size (in inches).
	Display type	16:9	Widescreen screen format.
		4:3	"Classic" screen format.
Video Repro	Featurebox type	Falconic	No "Eagle" present (only "Natural Motion").
		Eagle	"Eagle" present (Pixel Plus).
	Lightsensor	Yes	Feature present.
		No	Feature not present.
	2D Combfilter	Yes	Feature present.
		No	Feature not present.
	Picture improvement	Yes	LTP (TOPIC) present.
		No	LTP (TOPIC) not present.
	Signalling bits	Yes	For 16:9 sets
		No	For 4:3 sets
Audio Repro	AVL	Yes	Automatic Volume Limiter, available in menu.
		No	Automatic Volume Limiter not available in menu.
Miscellaneous	Home Cinema	Yes	Set with Home Cinema Link (EU only).
		No	Set without Home Cinema Link
	Integrated RC	Yes	Feature present.
		No	Feature not present.
	Tuner type	UV1316	Set with Philips tuner.
		TEDE9	Set with Alps tuner.
	P50 DVD menu line	Yes	Sets with Home Cinema Link (EU only).
		No	Sets without Home Cinema Link.
	Hotel mode	Yes	Hotel mode on
		No	Hotel mode off
Option no.	Group 1		Group 1 option code overview (see set sticker).
	Group 2		Group 2 option code overview (see set sticker).

8.4.4 OPT. NO. (Option numbers)

Select this sub menu to set all options at once (expressed in two long strings of numbers).

An option number (or "option byte") represents a number of different options. When you change these numbers directly, you can set all options very quickly. All options are controlled via eight option numbers.
When the EAROM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a sticker inside the TV set (just below the main power supply on the metal frame).

Example: The options sticker gives the following option numbers:

- 20556 24610 49410 00000
- 00022 00001 00034 02752

The first line (group 1) indicates options 1 to 4, the second line (group 2) options 5 to 8 (see tables below).
Every 5-digit number represents 16 bits (so the maximum number will be 65536 if all options are set).
When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number.

Service tip: An easy way to check the option numbers is:

1. Convert the decimal option number (as given on the options sticker) to a binary number (e.g. by means of the 'scientific' calculator that comes with MS Windows™). E.g. OB3= 49408 (dec)= 1100000100000000 (bin)
2. Use this binary number to check against the bits as mentioned in the tables below. This means in above-mentioned sample, that Bit 8, 14, and 15 are "1" (means "set"), and that the rest is "0". So, actually this means that the options "Aspect Ratio" (Bit 8), "Home Cinema" (Bit 14), and "Integrated RC" (Bit 15) are set for this particular model.

Table 8-8 Option bytes Group 1

Byte nr.	Bit nr.	Decimal value	Option name	Settings (in decimal values)		Option Byte value
OB1	0	1	Featurebox	0= None (n.a.)	2= Prozonic (n.a.) 3= Eagle 4= Falconic (n.a.) 5= Falconic+ (n.a.)	OB1= sum of the "on" bits (decimal)
	1	2				
	2	4				
	3	8	2D Comb Filter	0= Off	8= On	
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	Light Sensor	0= Off	64= On	
	7	128	Luma Trans. Proc.	0= Off	128= On	
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	WSS	0= Off (US/LA/AP-N)	4096= On (EU/AP-P)	
	13	8192	3D Comb Filter	0= Off (EU/AP-P)	8192= On (US/LA/AP-N)	
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB2	0	1	n.a.	0		OB2= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	Virtual Dolby	0= Off (Dolby prologic)	32= On	
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	Flash RAM	0= Off	8192= On	
	14	16384	EPG Type (EU only)	0= Type2	16384= Textguide only 32768= NextTView 2C3 49152= NexTView 2	
	15	32768				
OB3	0	1	n.a.	0		OB3= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	Aspect Ratio	0= 4:3	256= 16:9	
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	Home Cinema	0= Off (US/LA/AP)	16384= On (EU)	
	15	32768	Integrated RC (P50)	0= Off (US)	32768= On (EU/LA/AP)	
OB4	0	1	n.a.	0		OB4= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		

Notes:- n.a.= not applicable.- AP-P= Asian Pacific PAL-multi, AP-N= Asian Pacific NTSC, EU= Europe, LA= Latin America, US= NAFTA.

Table 8-9 Option bytes Group 2

Byte nr.	Bit nr.	Decimal values	Option name	Settings (in decimal values)		Option Byte value
OB5	0	1	n.a.	0		OB5= sum of the "on" bits (decimal)
	1	2	Auto Store Mode	0= None (US/LA/AP-N)	2= PDC/VPS (EU) 4= TXT Page (EU) 6= PDC/VPS/TXTpage (EU)	
	2	4				
	3	8	n.a.	0		
	4	16	Picture Mute	0= Off	16= On	
	5	32	n.a.	0		
	6	64	Virgin Mode	0= Off	64= On	
	7	128	Hotel Mode	0= Off	128= On	
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	TXT Preference	0= TOP	4096= FLOF	
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB6	0	1	P50 DVD menu-line	0= Off (US/LA/AP)	1= On (EU)	OB6= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	Region	0= EU	16= AP PAL-multi 32= AP NTSC 48= US	
	5	32				
	6	64				
	7	128				
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB7	0	1	n.a.	0		OB7= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB8	0	1	n.a.	0		OB8= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	Picture tube size	0= 30 inch	256= 32 inch 512= 37 inch 768= 42 inch	
	9	512				
	10	1024				
	11	2048				
	12	4096	Display type	0= LCD	4096= PDP	
	13	8192				
	14	16384	n.a.	0		
	15	32768	n.a.	0		

Notes: - n.a.= not applicable.- AP-P= Asian Pacific PAL-multi, AP-N= Asian Pacific NTSC, EU= Europe, LA= Latin America, US= NAFTA.

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

1. Introduction
2. Block diagram
3. Power supply
4. Input/Output (I/O)
5. Video Processing
6. Audio
7. Synchronisation
8. Control
9. Protections
10. PDP Panel
11. Software upgrading
12. Abbreviation list
13. IC Data Sheets

Notes:

- Only **new** circuits (circuits that are not published recently) are described.
- For the other "known" circuits, see:
  - EM5E manual. This manual is available under number 3122 785 12560 (= English).
  - EM6E manual. This manual is available under number 3122 785 13070 (= English).
  - FM24 manual. This manual is available under number 3122 785 12770 (= English).
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the wiring, block and circuit diagrams. Where necessary, you will find a separate drawing for clarification.
- Where EBILD (Eagle Based Intelligent LCD Driver) is mentioned, please note that the SW for this programmable device is optimised for PDP.

9.1 Introduction

The FTP11 is a 42-inch integrated PDP flat screen set, which uses the EM6 small signal panel. The HOP part is replaced by an Erasable Programmable Logic Device (EPLD).
This chassis has no PIP, no FDW, and no TXT-DW. Also, features like Dolby, DVD-loader, HDD, and/or radio are not present.
In this chapter, the European version is described. In some cases also the US version is described.

9.1.1 Features

This chassis has the following (new) features:

- Next step "Active Control" with: two new bars ("Motion" and "Tint Control" bar), four split demos, etc.
- Small Signal Panel (SSP) that is based on the existing EM6 architecture: a full panel with integrated (shielded) Feature Box as in the former MG-chassis. This approach gives better EMC / crosstalk behaviour and less cables.
- Upgradeable main software (via ComPair).

9.1.2 Small Signal Panel

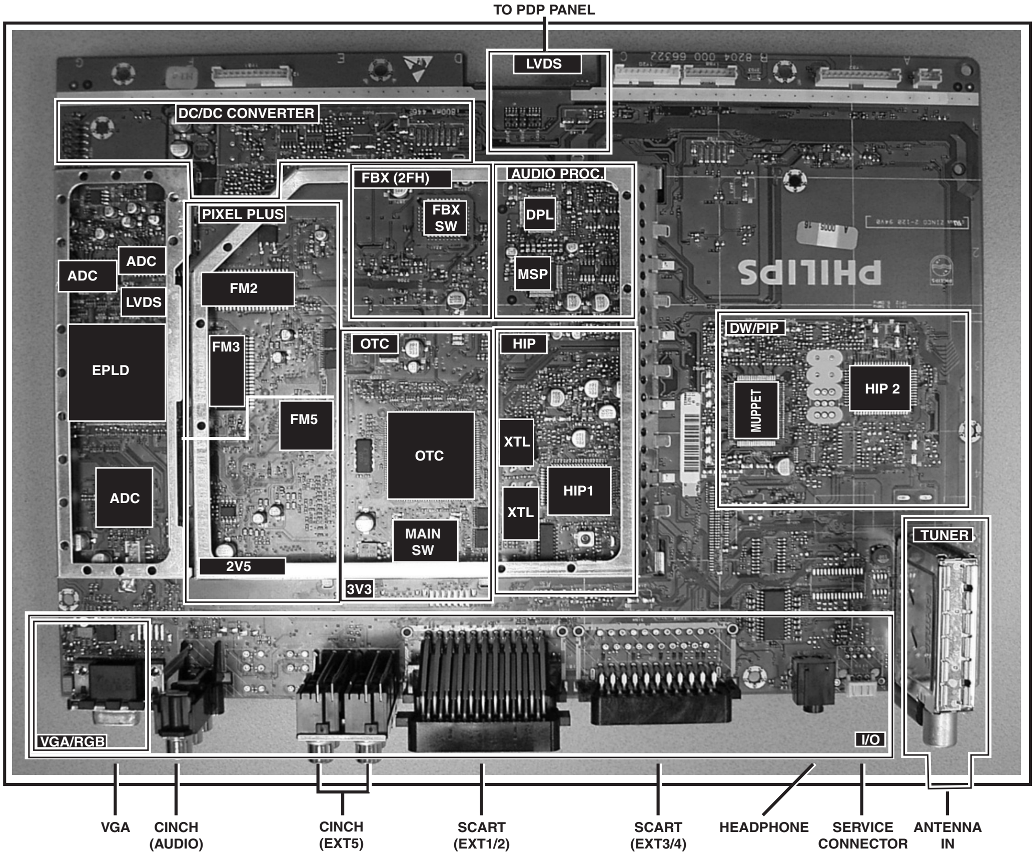
The SSP is a high tech module (four layer, 2 sides reflow technology, full SMC) with very high component density and partial shielding (FBX, EBILD) for EMC-reasons. Despite this, it is designed in such a way, that repair on component level is possible. To achieve this, attention was paid to:

- Clearance around surface mounted ICs (for replacing).
- Detailed diagnostics and fault finding is possible via ComPair.
- Software upgrading is possible via ComPair.

Further features of the SSP are:

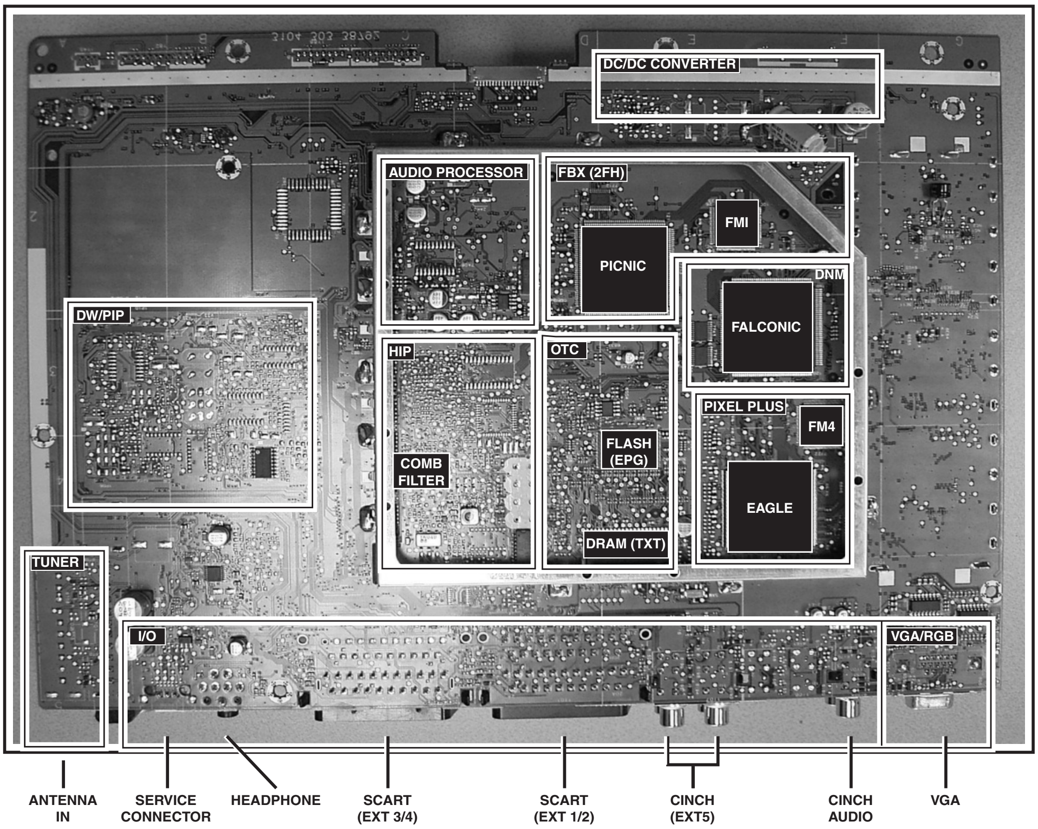
- The 3D Comb filter functionality (for USA) is integrated on the SSP.
- The rear I/O connections (like SCART and cinch) are integrated on the SSP, even as the tuner.
- VGA input (for Europe).
- DVI input (only for USA).

On the photographs you can see where all the functional cells are located on the SSP:


TO PDP PANEL
LVDS
DC/DC CONVERTER
FBX (2FH)
FBX SW
AUDIO PROC.
DPL
MSP
PIXEL PLUS
ADC
ADC
LVDS
FM2
FM3
EPLD
FM5
OTC
OTC
MAIN SW
HIP
XTL
XTL
HIP1
DW/PIP
MUPPET
HIP 2
ADC
2V5
3V3
TUNER
VGA/RGB
I/O
VGA
CINCH (AUDIO)
CINCH (EXT5)
SCART (EXT1/2)
SCART (EXT3/4)
HEADPHONE
SERVICE CONNECTOR
ANTENNA IN

CL 36532075_049.eps
241103

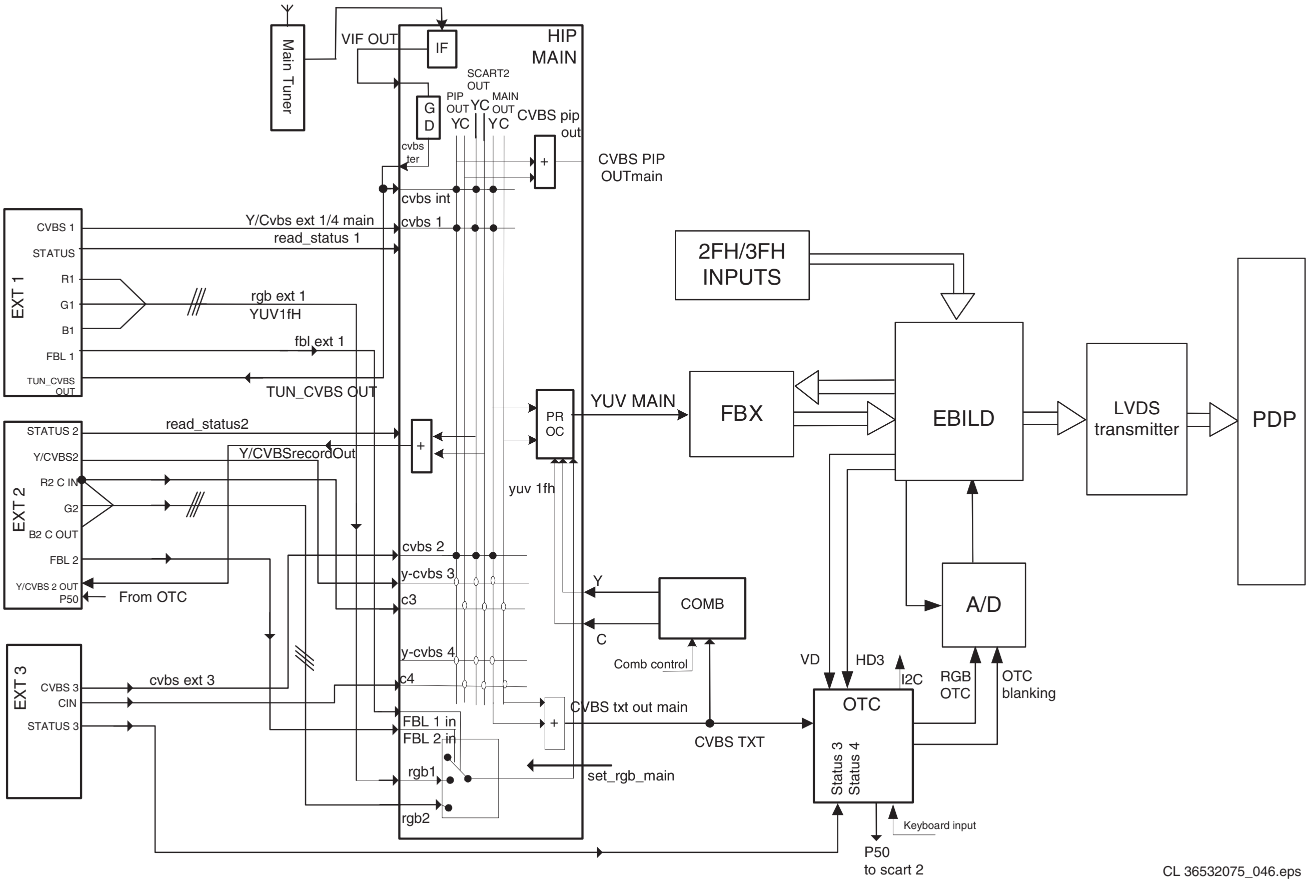
Figure 9-1 SSP top view


DC/DC CONVERTER
AUDIO PROCESSOR
FBX (2FH)
FMI
PICNIC
DNM
FALCONIC
DW/PIP
HIP
OTC
PIXEL PLUS
FM4
COMB FILTER
FLASH (EPG)
EAGLE
DRAM (TXT)
TUNER
I/O
VGA/RGB
ANTENNA IN
SERVICE CONNECTOR
HEADPHONE
SCART (EXT 3/4)
SCART (EXT 1/2)
CINCH (EXT5)
CINCH AUDIO
VGA

CL 36532075_050.eps
171103

Figure 9-2 SSP bottom view

9.2 Block Diagram


Main Tuner
VIF OUT
IF
HIP
MAIN
G
D
SCART2
OUT
PIP
OUT
YC
MAIN
OUT
YC
YC
CVBS pip
out
cvbs
ter
CVBS PIP
OUTmain
cvbs int
cvbs 1
EXT 1
CVBS 1
STATUS
R1
G1
B1
FBL 1
TUN_CVBS
OUT
Y/Cvbs ext 1/4 main
read_status 1
rgb ext 1
YUV1fH
fbl ext 1
TUN_CVBS OUT
EXT 2
STATUS 2
Y/CVBS2
R2 C IN
G2
B2 C OUT
FBL 2
Y/CVBS 2 OUT
P50
From OTC
read_status2
Y/CVBSrecordOut
PR
OC
YUV MAIN
yuv 1fh
cvbs 2
y-cvbs 3
c3
y-cvbs 4
c4
FBL 1 in
FBL 2 in
rgb1
rgb2
EXT 3
CVBS 3
CIN
STATUS 3
cvbs ext 3
CVBS txt out main
set_rgb_main
2FH/3FH
INPUTS
FBX
EBILD
LVDS
transmitter
PDP
Y
C
COMB
Comb control
A/D
VD
HD3
I2C
RGB
OTC
OTC
blanking
OTC
CVBS TXT
Status 3
Status 4
Keyboard input
P50
to scart 2

CL 36532075_046.eps
201103

Figure 9-3 Block diagram FTP11

The main tuner is a PLL tuner and delivers the IF-signal, via audio and video SAW-filters, to the main HIP (High-end Input Processor). This HIP has the following functions:

- IF modulation.
- Video source select and record select (for 1fH inputs).
- Colour decoder.
- Synchronisation.

The following video input/output connections (with audio connections) are available for Europe:

- Side: interfaces CVBS and Y/C.
- EXT1: interfaces CVBS, RGB-, and YUV-input (1fH)
- EXT2: interfaces CVBS and Y/C (meant for VCR or DVDR connection).
- EXT3: interfaces CVBS.
- AV5: interfaces YPbPr (2fH/3fH).
- AV6: interfaces VGA (2fH/3fH).

The HIP delivers YUV and H/V-sync signals to the PICNIC (in the Feature Box). This IC takes care of:

- Analogue to Digital conversion and vice versa.
- 100 Hz processing
- Interlaced to progressive scan conversion.
- Panorama mode.
- Noise reduction.
- Dynamic contrast.

After the PICNIC, the YUV-signals are fed to the FALCONIC for "Natural Motion", followed by the Eagle for picture enhancement. The processed YUV signals (from Eagle or PICNIC) are, together with the sync-signals from the PICNIC, then fed to the EBILD (Eagle Based Intelligent LCD Driver). This programmed IC handles the video control. The RGB-signals for TXT/CC/OSD (from the uP) are also inserted via this IC. The video part delivers the RGB signals to the PDP-panel.

The sound part is built around an MSP (Multi-channel Sound Processor) for IF sound detection, sound control and source selection. Amplification is done via a "class D" integrated power amplifier IC, the TDA7490.

The microprocessor, called OTC (OSD, TXT/CC and Control) takes care of the analogue TXT input processing and output processing. The OTC, ROM, and RAM are supplied with 3.3 V. The NVM (Non Volatile Memory) is used to store the settings; the Flash-RAM contains the set software.

9.3 Power Supply

For Service this supply-panel is a black box.
When defect (this can be traced via error-codes in the error buffer, or by strange phenomena), a new panel must be ordered, and after receipt, the defective panel must be send for repair.
In that case before sending it, check if the supply-output lines match with the values on the PDP-sticker.

9.3.1 Power Balance

Table 9-1 Total power balance overview

Voltage	Value	Current (max)	P_max	Remarks
+3V3-DISP	3.3 V	3.6	12	
+5V-DISP	5 V	0.8	4	
+5V2-DISP	5.2 V	0.3	1.6	Standby voltage
+8V-DISP	8.6 V	0.4	3.4	
+9V-STBY	9 V	-		
+9V-STBY-SW	9 V	-		

9.3.2 Switch On/Off

Via the ON/OFF knob on the side the set can be switched “on” or “off”, although when “off” not all power is removed. Only by disconnecting the mains power cord from the power socket all power is really gone.

9.3.3 Power States

There are four different power states. Some characteristics of these are summarised in the "Power states" table.

Table 9-2 Power states overview

Power state	On/Off switch	Remarks
OUT (mainscord disconnected)	X	No power
OFF	OFF	Only standby supply is working OTC not powered Main supply not working No LED is "on"
STAND BY (1)	ON	Standby supply is working Red LED is "on" (in Europe and in US)
SEMI STAND BY	ON	Standby supply is working Main supply is working PDP is not active EPG loading and P50 recording possible (Europe) Time extraction (Europe and US) Red and Green LEDs are "on"
ON	ON	The set is working Green LED is "on" (in Europe and in US)

Events from OFF to SEMI-STANDBY or ON

(See also figure "Step wise start-up diagram" in chapter "Service Modes, Error Codes, and Fault Finding").

1. The set is in "off" state until the ON/OFF switch is switched to "on". The standby voltage +5V-DISP becomes available, the OTC resets, the I/O pins are initialised, and the watchdog is enabled. The set comes in standby mode.
   - The sets leaves the stand by mode if:
   - A time extraction must be started (after every start up).
   - A P50 recording has to start.
   - An EPG loading has to start.
   - The Standby bit is set to "off"; when a user switches on the set, the standby bit is also set to "off".
2. The STANDBY line is set to "low", the +5V_SW is "on", the relay closes, and the LCD AUX supply starts up (8V6 is present).
3. The rest of the ICs are initialised. The EBILD is initialised min 400 ms after the standby line is set to "low".
4. If the standby bit was set, the set goes into semi-standby until:
   - The time extraction is done.
   - The P50 recording has finished.
   - The EPG loading has finished.
5. If the standby bit was not set, the PDP is switched "on". The PWR-OK-PDP signal from the supply is received at the EBILD to inform the main processor of proper operating PDP supply.

Events in SEMI-STANDBY

1. The set can be in semi-standby during Time extraction, EPG loading, or P50 (Easylink) recording. The semi-standby state is ended when:
   - Time extraction has finished.
   - P50 recording has finished.
   - EPG loading has finished.
   - A P50 recording starts during EPG loading.
   - A user event "On" or "Standby".
   - The set goes into protection.
2. If the standby bit is not set (after user event), the PDP is switched "on".
3. If a P50 recording or an EPG loading has to start, the set stays in semi-standby. If the P50 recording has to start during EPG loading, the P50 has priority.
4. If there is no P50 recording or EPG loading, the set goes to standby.

Events from ON to SEMI-STANDBY/STANDBY

1. The set can be switched to standby:
   - Via the RC (to semi-standby).
   - Via the MENU button on the top control, long press (to semi stand by).
   - Via a protection (to standby).
2. The running instructions are finished.
3. The PDP is switched "off"; this is controlled by the OTC by means of the STANDBY line.
   - Sound is muted
   - If there was a protection, the STANDBY line is put "high", and the set goes to standby.
4. If there was no protection, the set goes to semi-standby.
5. After an event in semi-standby, the set goes to standby.
6. Protections are disabled.
7. The OTC sets the STANDBY line "high", this switches "off" the main power supply, and only the standby supply remains working.
8. The set is in standby.

9.4 Input/Output (I/O)

9.4.1 Introduction

The chassis follows the standard SCART specification:

- The presence of the incoming source is detected via pin 8 of the SCART signal.
- The Aspect Ratio of the incoming source is derived from the voltage level on SCART pin 8. The pin 8 information is handled by the HIP for SCART 1 and 2 and by the OTC for SCART 3.
- The P50 in/out is handled via P1-4 and P3-7 of the OTC.
- RGB sources break in with an additional fast blanking signal that is detected by the HIP. The HIP then internally chooses other signal processing. RGB sources that only have fast blanking and no pin 8 status do not overrule the main TV source. There is no automatic break in detection for the front input.
- The HIP for further image processing does the detection between Y/C and CVBS automatically.
- When Y/C is detected, the HIP will add Y and C signal to compose CVBS again. This addition should be overruled by software at the moment any Y/C signal is the source and the presence of a P50 Y/C video recorder is detected: only Y signal is directed to record out (C is already hardwired to EXT 2 out).
  Note: P50: Chroma-out is pin 7, Chroma-in is pin 15. Non-P50: both Chroma-out and -in is pin 15 (hardwiring C to pin 7 out; non-P50 not supported).
- The signal on MONITOR_OUT follows the incoming source, except in case the incoming source is EXT2, YPbPr-2fH, or VGA. Then the output signal should be FRONTEND_OUT.

Note: The SCART input (1fH) path is equal to the one described in the EM6E manual. Therefore, it is not described in much detail here.

9.4.2 Input detection

The RGB or YPbPr input signals (2fH/3fH) are sent to the ADC (AD9883A) together with H and V pulses from DVI (USA) or VGA (EUR), and the Y signal from YPbPr called Sync On Green (green is same line as Y). The AD converter:

- Detects via H and V sync, if RGB is present or not.
- Detects via Sync On Green, if YPbPr is present or not.
- Detects the selected sync.
- Selects the sync switch via I2C.
- Does AD conversion to 848 samples per line, 8 bits in 422 format. This means one bus for Y signal with 8 bits and one bus for UV with 4 U and 4 V bits. Depending on the system detected by EBILD, the sample frequency is changed. Via I2C, the "PLL_DIV" signal is given in 11 bits (2 Bytes).

When a 1fH input is detected, the AD converter is set in tristate.

1fH input flow

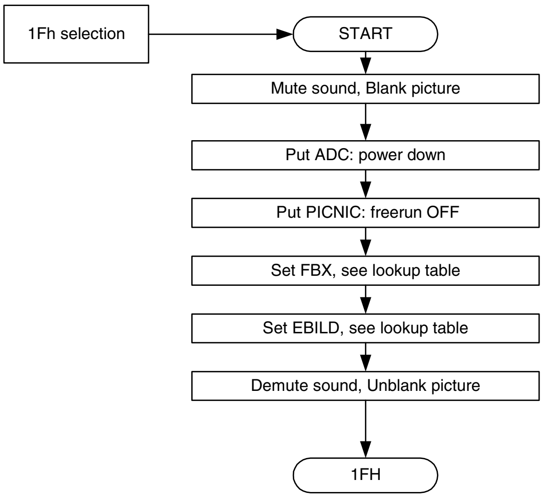

1Fh selection
START
Mute sound, Blank picture
Put ADC: power down
Put PICNIC: freerun OFF
Set FBX, see lookup table
Set EBILD, see lookup table
Demute sound, Unblank picture
1FH

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Figure 9-4 Flowchart 1fH detection

1. If a 1fH selection is done (except for AV4 in USA), the sound is muted and the picture is blanked.
2. The ADC is powered down.
3. The PICNIC is not in free run.
4. Both FBX and EBILD are set in 1fH (see lookup table).
5. Sound is demuted and picture is unblanked.

2fH/3fH input flow

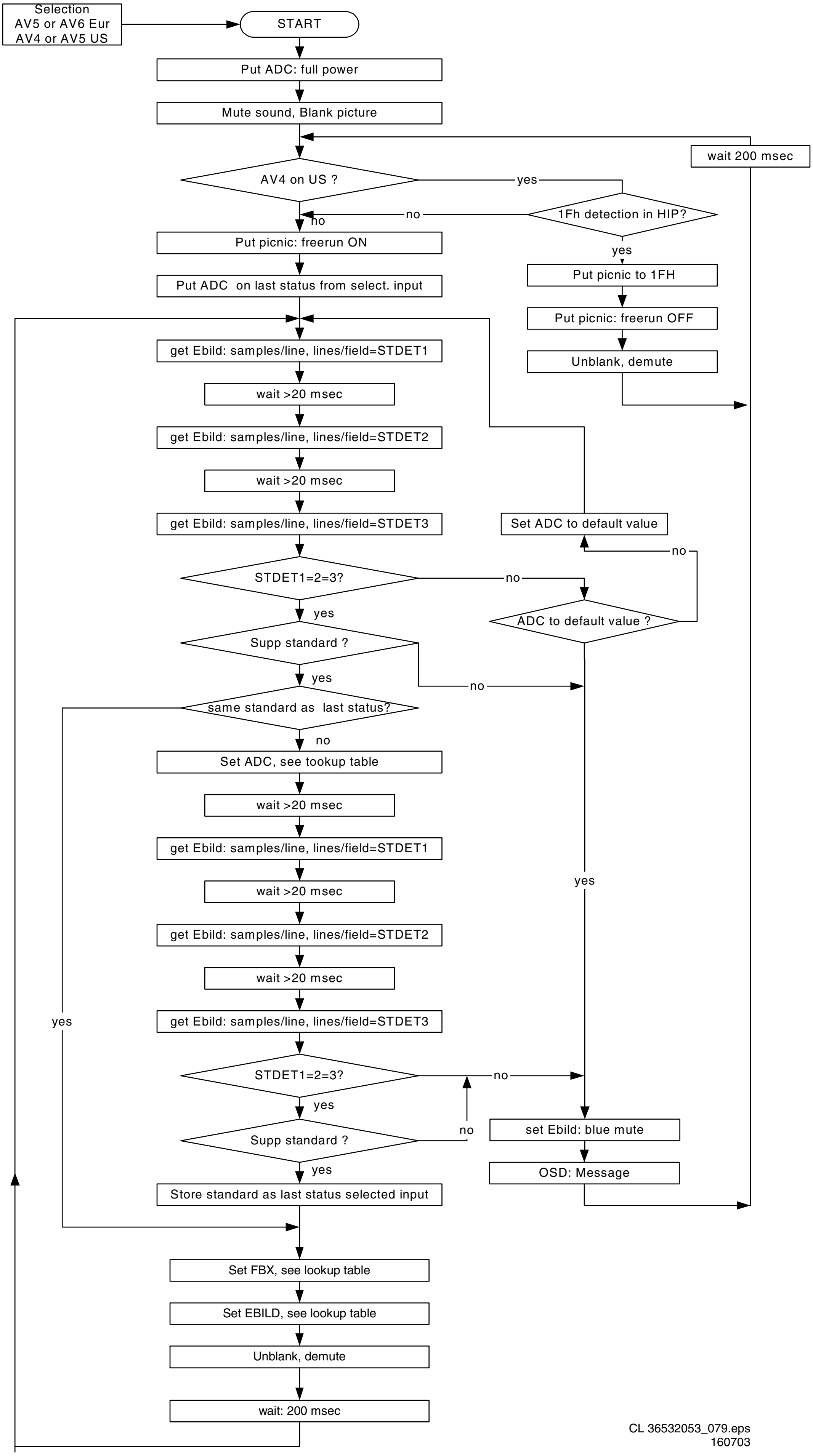
Selection
AV5 or AV6 Eur
AV4 or AV5 US
START
Put ADC: full power
Mute sound, Blank picture
wait 200 msec
AV4 on US ?
yes
1Fh detection in HIP?
no
no
yes
Put picnic: freerun ON
Put ADC on last status from select. input
Put picnic to 1FH
Put picnic: freerun OFF
Unblank, demute
get Ebild: samples/line, lines/field=STDET1
wait >20 msec
get Ebild: samples/line, lines/field=STDET2
wait >20 msec
get Ebild: samples/line, lines/field=STDET3
Set ADC to default value
no
STDET1=2=3?
no
yes
ADC to default value ?
Supp standard ?
no
yes
same standard as last status?
no
Set ADC, see tookup table
wait >20 msec
get Ebild: samples/line, lines/field=STDET1
wait >20 msec
get Ebild: samples/line, lines/field=STDET2
wait >20 msec
yes
yes
get Ebild: samples/line, lines/field=STDET3
STDET1=2=3?
no
yes
Supp standard ?
no
set Ebild: blue mute
yes
OSD: Message
Store standard as last status selected input
Set FBX, see lookup table
Set EBILD, see lookup table
Unblank, demute
wait: 200 msec

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Figure 9-5 Flowchart 2fH/3fH detection

1. The standard detection starts with a 2fH/3fH selection (this is AV5 / AV6 in Europe or AV4 / AV5 in USA).
2. The ADC is full powered (it was powered down in 1fH).
3. The sound is muted and the picture is blanked.
4. On AV4 in USA, an 1fH and 2fH/3fH signal can enter. This detection is done by the HIP. When 1fH is detected, the FBX is set to 1fH, the PICNIC is not in free run, the picture is unblanked, and the sound is demuted. The set is in 1fH state. This state is continues checked, because the input can change from 1fH to 2fH/3fH.
5. If the input is 2fH/3fH, the PICNIC is set to free run
6. The ADC is set to the last status from this selected input, because there is a big chance that the same standard is wanted.
7. The number of samples per line and lines per field is collected from the EBILD. The check is done three times. If the same value is measured within some tolerances (see lookup table) the standard is valid. The time between two measurements must be at least one frame or 20 ms.
8. If the ADC has not the right settings, the PLL does not lock, and the "STDET" measurements do not give the same results. The ADC is set to its default value; this value is able to catch all supported standards. If the ADC is already in the default value and no standard detection is possible, the set changes to blue mute.
9. If the standard is not supported, the set changes to blue mute via the EBILD, and a message is displayed.
10. If the standard is the same as the last status, the ADC is in the correct state, an both FBX and EBILD are set (see lookup table).
11. If the standard is changed, the ADC is set to the detected standard and a new check is done. If the standard is valid and supported, the new standard is stored in NVM as last status.
12. The FBX and EBILD are set (see lookup table)
13. Picture is unblanked and sound demuted.

Table 9-3 I/O lookup table

Selected Input	Standard	x fH	FBX	ADC	EPLD	Field Rate
Tuner, SC1..SC3.	480i	1 fH	PICNIC			
	576i	1 fH	PICNIC			
AV5 (Cinch)	480p	2 fH	EAGLE	YPbPr	YPbPr	60 Hz
	576p	2 fH	EAGLE	YPbPr	YPbPr	50 Hz
	1080i / 60 Hz	2 fH	EAGLE	YPbPr	YPbPr	60 Hz
	1080i / 50 Hz	2 fH	EAGLE	YPbPr	YPbPr	50 Hz
	720p / 60 Hz	3 fH / 720p	EAGLE	YPbPr	YPbPr	
	720p / 50 Hz	3 fH / 720p	EAGLE	YPbPr	YPbPr	
AV6 (VGA)	480p	2 fH	EAGLE		RGB	60 Hz
	576p	2 fH	EAGLE		RGB	50 Hz
	1080i / 60 Hz	2 fH	EAGLE		RGB	60 Hz
	1080i / 50 Hz	2 fH	EAGLE		RGB	50 Hz
	720p / 60 Hz	3 fH / 720p	EAGLE		RGB	
	720p / 50 Hz	3 fH / 720p	EAGLE		RGB	
	VGA	2 fH	EAGLE		RGB	60 Hz
	SVGA	2 fH	EAGLE		RGB	56 Hz

9.5 Video Processing

9.5.1 Introduction

Note: The FBX processing part is equal to the one described in the EM6E manual. Therefore, it is not described here (except for some basic info).

There are two diversities (see also figure "Block diagram FTP11" in paragraph "Block Diagram"):

- Europe: 3 SCARTs, 1 x 2fH/3fH inputs (YPbPr), and 1 VGA input
- USA: 3 AV inputs1 (AV4 can be 1fH or 2fH/3fH YPbPr), and a DVI 2fH/3fH input.

Note: There is also an AP version available. This version has no difference w.r.t. the European version, but comes with extra cables and some different option settings.

Short overview of video processing
The video processing is based on four key functions, being:

- The HIP + comb filter (for simple source select and video/chroma processing).
- The EBILD that takes over the video control functions of the HOP (as used in CRT based sets).
- The FBX configuration consisting of a PICNIC (100 Hz featuring), a FALCONIC (motion compensation and Auto TV featuring), and an EAGLE ("Pixel Plus" processing).
- A 2fH/3fH source selection.

Additionally, the following features are added

- One-chip NEC 3D comb filter (only for USA): this comb filter uses spatial and temporal filtering for the elimination of cross colour and cross luminance components. Not only for vertical lines, but also for stationary diagonal lines. This comb filter only supports the NTSC standard.
- The light sensor measurement required for "Active Control" is done by the OTC.

Basic functionality of HIP

I/O functionality

- The HIP selects the signals entering on 1fH base band. The HIP contains a source select matrix in order to handle a Tuner, three CVBS sources, two Y/C sources, and two RGB inputs (this in fact means one VIF input for tuner, four CVBS inputs with among them two Y/C inputs, and two RGB inputs). The HIP detects by itself whether the source is Y/C or CVBS, and decides how to handle the signal for further image processing. For Record Out, the signal is handled by software: if a P50 SVHS VCR is present and the signal to be recorded is Y/C, an Y/C signal should be passed to the VCR.
- There are also two inputs for the OTC that will handle status detection, other, or more detection. In case of RGB, the fast blanking signal (FBL) determines the break-through of the RGB1/YPbPr signal if activated beforehand by the user. If a YPbPr-1fH connection was done, then it is equally handled by the RGB1 input without using the internal matrix. The HIP delivers the main video output (YUV- 1fH signal) for further image processing and three

CVBS outputs, being: CVBS PIP/DS, CVBS_TXT_OUT for comb filter (always following YUV main!) and TXT processing, and the CVBS/Y_RECORD_OUT for EXT2.

IF functionality

- The HIP contains a multi standard IF circuit for video demodulation with AFC functionality, a sound IF amplifier, and an AM demodulator. An extra group delay correction is included.
- Chroma demodulation and video processing
- Sync acquisition, delivering H_A/V_A (Horizontal/Vertical Acquisition) towards FBX.

Basic functionality of EBILD

The EBILD is the interface between the FBX and the PDP screen. Its principal functions are:

- Video control functions of the HOP (Saturation, Contrast, Brightness).
- OSD and TXT insertion with blending.
- Video Matrix (NTSC, ATSC, PAL).
- For matrix displays additional functions like:
  - Contrast reserve (peak limiter),
  - Sync wheel,
  - Dithering (matrix displays are 8 bit),
  - Generation of correct timing for PDP display.
- I2C and SNERT bus.
- Sync control.
- Odd/Even field detection.
- A/D converter alignment for OSD.
- H Sync generation for OTC.
- Control lines.
- Standard detection.
- Handle shifts of VD.
- Suppress H and V pulses in active video.
- Generate a H_REF for PICNIC (1fH) in case of a 2fH/3fH source.

Basic functionality of the OTC

The OTC combines the microprocessor and TXT/OSD functionality; it will also handle some of the status detections. It also takes care of P50 communication.

9.5.2 Video Source Selection

Table 9-4 Video input overview

I/O	Main/Sub	CVBS-in	CVBS-out	Y/C-in	Y/C-out	RGB 1fH+ FBL	YPbPr 1fH	YPbPr 2fH/3fH	RGB 2fH	Status 4/3-16/9	P50
EXT1 SCART	Main	Yes	Yes, frontend	No	No	Yes	No	No	No	Yes	No
	Sub	Yes	n.a.	No	n.a.	No	No	No	No	Yes	No
EXT2 SCART	Main	Yes	Yes, WYSIWYR	Yes	Yes	Yes	No	No	No	Yes	Yes
	Sub	Yes	n.a.	Yes	n.a.	Yes	No	No	No	Yes	Yes
EXT3 SCART	Main	Yes	No	No	No	No	No	No	No	Yes	No
	Sub	Yes	n.a.	No	n.a.	No	No	No	No	Yes	No
AV5 cinch	Main	No	No	No	No	No	Yes	Yes	No	Only video det.	No
	Sub	No	n.a.	No	n.a.	No	Yes	No	No	Only video det.	No
AV6 VGA	Main	No	No	No	No	No	No	No	Yes	Only video det.	No
	Sub	No	n.a.	No	n.a.	No	No	No	No	n.a.	No

The High Definition Input (HDI) part has two input "ports". Each port consists of a video input and an audio input. The ports are named "VGA" (= AV6) and "AV5" and will be referred to using these names.

The physical connectors for these inputs are:

- **AV5.** Three cinches that can be used for YPbPr with sync on Y and two cinches for analogue Audio (left and right).
- **VGA.** One VGA connector and two cinches for analogue Audio (left and right).

Table 9-5 AV5 (YPbPr) input signals

AV5 Inputs (YPbPr)	System	Field freq. (V)	Line freq. (H)
576 p	PAL	50 Hz	31.25 kHz
480 p	NTSC	60 Hz	31.5 kHz
1080 i	ATSC	60 Hz	33.7 kHz
1080 i	ATSC	50 Hz	28.125 kHz
720 p	ATSC	50 Hz	37.5 kHz
720 p	ATSC	60 Hz	45 kHz

Table 9-6 AV6 (VGA) input signals

AV6 Inputs (VGA)	System	Field freq. (V)	Line freq. (H)
VGA	640x480	60 Hz	31.5 kHz
SVGA	800x600	56 Hz	35.1 kHz
576 p	PAL	50 Hz	31.25 kHz
480 p	NTSC	60 Hz	31.5 kHz
1080 i	ATSC	60 Hz	33.7 kHz
1080 i	ATSC	50 Hz	28.125 kHz
720 p	ATSC	50 Hz	37.5 kHz
720 p	ATSC	60 Hz	45 kHz

9.5.3 Video Processing

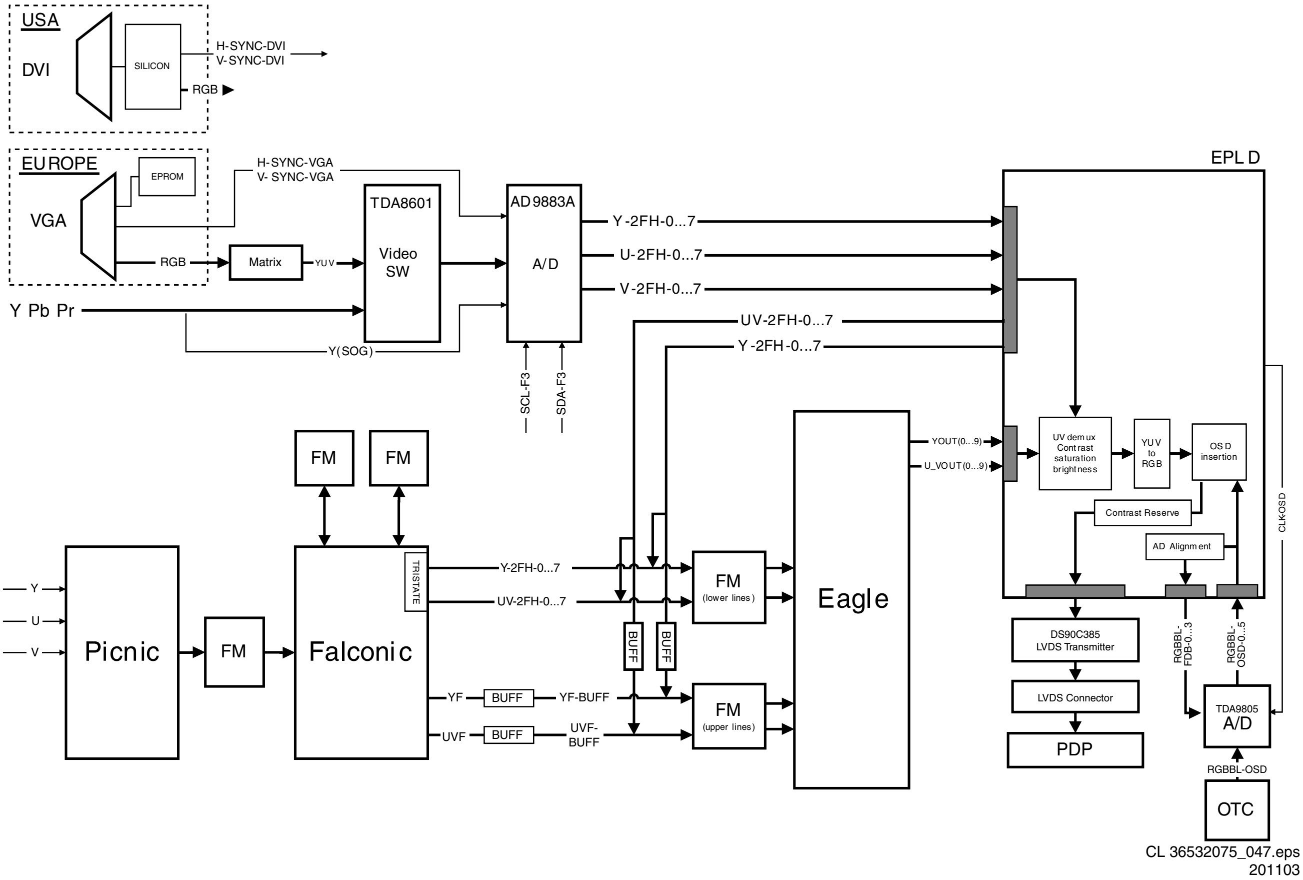
USA
DVI
SILICON
H-SYNC-DVI
V-SYNC-DVI
RGB
EUROPE
EPROM
VGA
H-SYNC-VGA
V- SYNC-VGA
RGB
Matrix
YUV
TDA8601
Video SW
AD9883A
A/D
Y Pb Pr
Y(SOG)
SCL-F3
SDA-F3
Y-2FH-0...7
U-2FH-0...7
V-2FH-0...7
UV-2FH-0...7
Y-2FH-0...7
EPLD
YOUT(0...9)
U_VOUT(0...9)
UV demux Contrast saturation brightness
YUV to RGB
OSD insertion
Contrast Reserve
AD Alignment
CLK-OSD
DS90C385 LVDS Transmitter
LVDS Connector
PDP
RGBBL-FDB-0...3
RGBBL-OSD-0...5
TDA9805 A/D
RGBBL-OSD
OTC
Y
U
V
Picnic
FM
FM
FM
Falconic
TRISTATE
Y-2FH-0...7
UV-2FH-0...7
YF
BUFF
YF-BUFF
UVF
BUFF
UVF-BUFF
BUFF
BUFF
FM (lower lines)
FM (upper lines)
Eagle

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Figure 9-6 Video processing 2fH/3fH input

The outputs toward the electronics of the set consist of:
- YUV-422.
- H-2FH-AD-OUT and V-2FH-AD-OUT.
- Left and right audio channels (analogue).
- CLK-2FH.

Notes:
- In case of 2fH inputs, the signal is (after detection via the EBILD) routed through the FBX for picture improvement. The YUV output of the Eagle is then routed to the EBILD for the displaying part.
- In case of 3fH inputs, the signal is not routed via the FBX (because the Eagle cannot handle them), but directly processed by the EBILD.

9.5.4 Miscellaneous

Comb Filter

The comb filter functionality can be enabled or disabled via the HIP. This means allowing or disallowing the HIP to use the comb filter. Both the conventional 2D comb filter (EUR) and the 3D comb filter (USA) have to use this HIP command.

Notes:
- The command ENABLE_COMBFILTER enables the function. If the TV standard that enters the TV is one where a comb filter is applicable (e.g. PAL or NTSC, not SECAM), the HIP will determine self if the video signal can be combed and as a consequence, the video processing output can be CVBS or Y/C. No software interaction is needed.
  Remark: Enabling the comb filter does not necessarily mean that the signals will be combed.
- The comb filter must be disabled in case of RGB and for YPbPr-1fH, to avoid big horizontal shifts of the picture caused by the comb filter processing.
- The comb filter is also disabled at very low quality antenna signals for AP due to vertical instability/scrolling effects.

Auto TV

The Auto Picture Control or in short AutoTV, aims at providing the customer the best possible picture performance at any time. Therefore, it performs real time processing of the video signal and because of that, it decides to adapt several video parameters throughout the whole chassis. The total effect of Auto Picture Control on the screen can be selected by the use of the remote control. The commercial name for the feature is "Active Control".

The sets have three digital options: Progressive Scan, Pixel Plus, and Movie Plus. The Progressive Scan mode has no Pixel Plus enhancement. For 2fH inputs, only Progressive Scan or Pixel Plus mode can be selected. For 3fH inputs no digital options are available.
The aim of Movie Plus mode is to reduce the Halo artefacts (halo's are artefacts introduced with the Natural Motion feature). Reducing halo's will result in motion judder. This is compensated by the FBX software.

The basic component for Auto TV is the FBX. It measures the picture content and it has the most video control parameters on board, like peaking, coring, DNR, and so on. With the presence of the Eagle, additionally the colour enhancement functions and the LTI are controlled. Also, the light sensor, needed for ambient light control, is supported via the OTC. Finally, vertical peaking is mostly done in Eagle, a little in the PICNIC, and the motion compensation and DNR is done in the FALCONIC.

See also EM5 service manual.

9.6 Audio

9.6.1 Introduction

In this chassis, there are only Virtual Dolby sets, but there is diversity between Europe and USA sets.

9.6.2 Audio decoding

Two audio decoders will be used:
- ITT MSP 3411: for Europe sets.
- ITT MSP 3421: for USA sets.

Both MSP versions also decode NICAM. The AM signal is also decoded by the MSP.

9.6.3 Audio source selecting

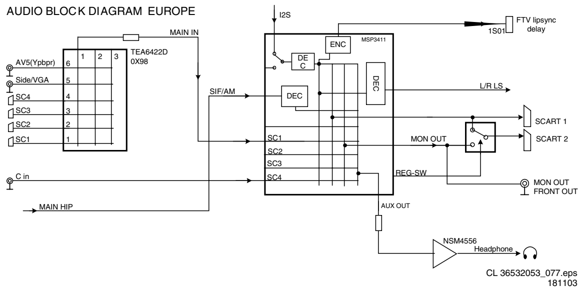

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Figure 9-7 Audio block diagram

The MSP covers a SIF input, 4 stereo inputs and one mono input. As this chassis needs more inputs, one matrix IC (TEA6422D, item 7I17) is added. The stereo inputs on this IC are:
- For Europe:
  - EXT1.
  - EXT2.
  - EXT3.
  - AV5 (YPbPr 2fH/3fH).
  - AV6 (VGA).
- For USA:
  - AV1.
  - AV2.
  - AV4 (YPbPr 1fH or 2fH/3fH).
  - AV5 (DVI).

There are three separated outputs on the matrix IC, but only the main output (MAIN_IN), going to the MSP, is used.

The MSP has the following inputs:
- SIF input (this can be FM, AM, or NICAM).
- MAIN_IN from matrix IC TEA6422D.
- Centre input.

An S/PDIF in/output is not foreseen.

9.6.4 Audio processing

European sets have an MSP3411, USA sets have an MSP3421. Both can handle Virtual Dolby. All sets have 2 x 10 W_rms output.
Following **outputs** are foreseen:
- Europe:
  - EXT1: Front-end
  - EXT2: WYSIWYR.
  - Monitor out: for external Dolby ProLogic amplifier.
  - Headphone out.
- USA:
  - Monitor out: Front-end.
  - Headphone out.

Important remarks

- For Europe: Régimbeau switch (REG_SW): this switch (item 7I20) is needed to prevent feedback (Larsen effect). When EXT2 is chosen as incoming signal, the output of EXT2 following the main picture, is also EXT2. This will cause the Larsen effect. To prevent this, the record select must be switched to tuner. This is especially important when decoders are used (e.g. Canal + decoder) behind a "transparent" VCR connected to EXT2.
- It is not allowed to mix up analogue and digital signals in the MSP; SCART-in towards SCART-out should be treated in the analogue source select part of the MSP. Reason for this, is the limited bandwidth in the MSP (16 kHz) while the analogue source selection part can carry up to 20 kHz.
- If a 2fH/3fH source is selected, it is not possible to handle the video signal in the 1fH source selection. Since the video signal cannot be connected to EXT2, the output of EXT2 is switched to FRONTEND, and MONITOR OUT is WYSIWYR (same source as video).

9.6.5 Audio Amplifier Panel (Diagram A)

Introduction

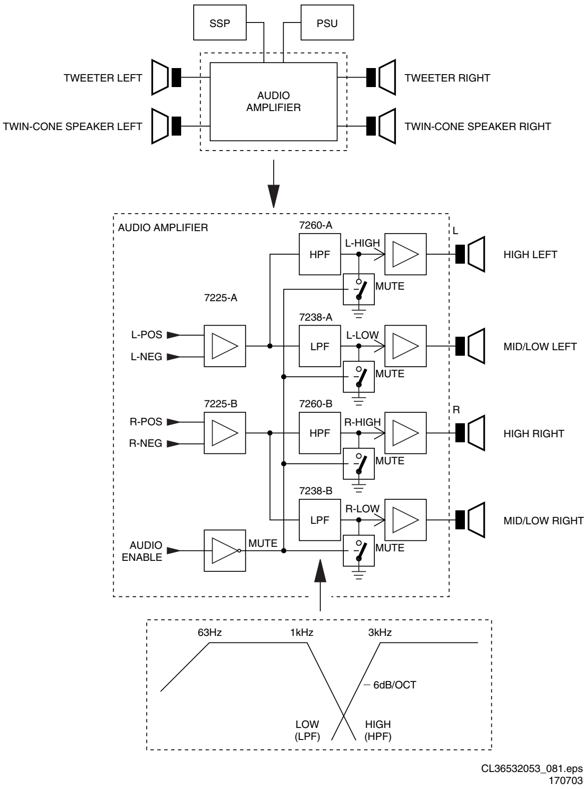

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Figure 9-8 Block diagram Audio Amplifier

This panel houses the audio filters and amplifiers necessary for driving the speakers. The differential audio inputs (for common mode immunity) come from the SSP (via connector 0388).
The PSU delivers the positive and negative supply voltage of 12 V_dc, as well as the +5V2 (standby) voltage.
After being filtered and amplified, the signals go to the speaker section, where the (twin cone) low/mid range speakers and the tweeters are driven (load impedance is 8 Ω).

The headphone amplifier is a straightforward OpAmp amplifier (IC7A07-A, MC33178D). It is supplied with +11V_AUD.

Supply (Diagram A7)
The supply voltage is a symmetrical voltage of +/- 14.5 V_dc, generated by the main supply via L5002.

- V_SND_POS (+12 V_dc) on connector 0302 pin 5/6.
- V_SND_NEG (-12 V_dc) on connector 0302 pin 1/2.

Filter (Diagram A2)
Electrical filtering is needed for following reasons:

- Limiting the cone excursion, thereby reducing the distortion.
- Increasing the power handling capacity (PHC).

Active second order Sallen-Key filters are used, with crossover frequencies of 1 kHz for the low pass filter, and 3 kHz for the high pass filter.

The audio signals are filtered **before** the amplifier. There are some reasons for doing this:

- It is now easy to do active filtering.
- Less costs (no expensive coils and capacitors).

Low Pass Filter (LPF)
For L and R separately, a Low Pass Filter (IC7238A and B) is processing L_LOW and R_LOW.
The output signal of this filter is then fed to the audio amplifier (identical for right channel).

High Pass Filter (HPF)
For L and R separately, a High Pass Filter (IC7260A and B) is processing L_HIGH and R_HIGH.
The output signal of this filter is then fed to the audio amplifier (identical for right channel).

Amplifier (Diagrams A3 to A6)
Each speaker has its own class-D amplifier. These amplifiers combine a good performance with a high efficiency, resulting in a big reduction in heat generation.

Principle
Audio-power-amplifier systems have traditionally used linear amplifiers, which are well known for being inefficient. In fact, a linear Class AB amplifier is designed to act as a variable resistor network between the power supply and the load. The transistors operate in their linear region, and the voltage that is dropped across the transistors (in their role as variable resistors) is lost as heat, particularly in the output transistors. Class D amplifiers were developed as a way to increase the efficiency of audio-power-amplifier systems.

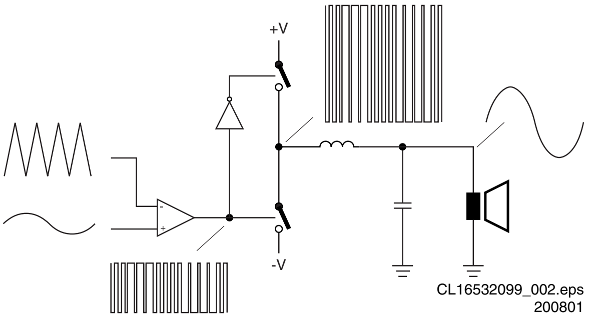

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Figure 9-9 Principle Class-D Amplifier

The Class D amplifier works by varying the duty cycle of a Pulse Width Modulated (PWM) signal.
By comparing the input voltage to a triangle wave, the amplifier increases duty cycle to increase output voltage, and decreases duty cycle to decrease output voltage.
The output transistors (item 7365 on diagram A3) of a Class D amplifier switch from 'full off' to 'full on' (saturated) and then back again, spending very little time in the linear region in between. Therefore, very little power is lost to heat. If the transistors have a low 'on' resistance (R_DS(ON)), little voltage is dropped across them, further reducing losses.
A Low Pass Filter at the output passes only the average of the output wave, which is an amplified version of the input signal.
In order to keep the distortion low, negative feedback is applied (via R3308). A second feedback loop (via R3310) is tapped after the output filter, in order to decrease the distortion at high frequencies.

The **advantage** of Class D is increased efficiency (= less heat dissipation). Class D amplifiers can drive the same output power as a Class AB amplifier using less supply current.
The **disadvantag**e is the large output filter that drives up cost and size. The main reason for this filter is that the switching waveform results in maximum current flow. This causes more loss in the load, which causes lower efficiency. An LC filter with a cut-off frequency less than the Class D switching frequency (350 kHz), allows the switching current to flow through the filter instead of the load. The filter is less lossy than the speaker, which causes less power dissipated at high output power and increases efficiency in most cases.

Mute (Diagram A3 for "Left High")
A mute switch (item 7302) is provided at the PWM inputs (item 7315, LM311). This switch is controlled by the AU_EN_NOT line, which is controlled via the POR signal (mute at start-up) and via the SOUND_ENABLE line from the OTC (mute during operation). This circuitry is the same for all four amplifier parts.

Protections

Short-circuit Protection (e.g. Diagram A3 for "Left High")
A protection is made against a too high temperature of transistor 7355 in case of a short-circuit of output FET 7365-1. Transistor 7340 is sensing the current through transistor 7355 via R3355, and activates the DC-protection line (see below) in case the current becomes too high. This is the same for all four amplifier parts.

DC-protection (Diagram A7)

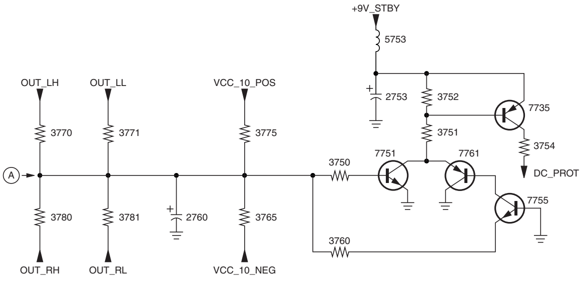

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Figure 9-10 DC Protection

Because of the symmetrical supply, a DC-blocking capacitor, between the amplifier and the speaker, is not necessary. However, it is still necessary to protect the speaker for DC voltages.
The following protections are therefore implemented:

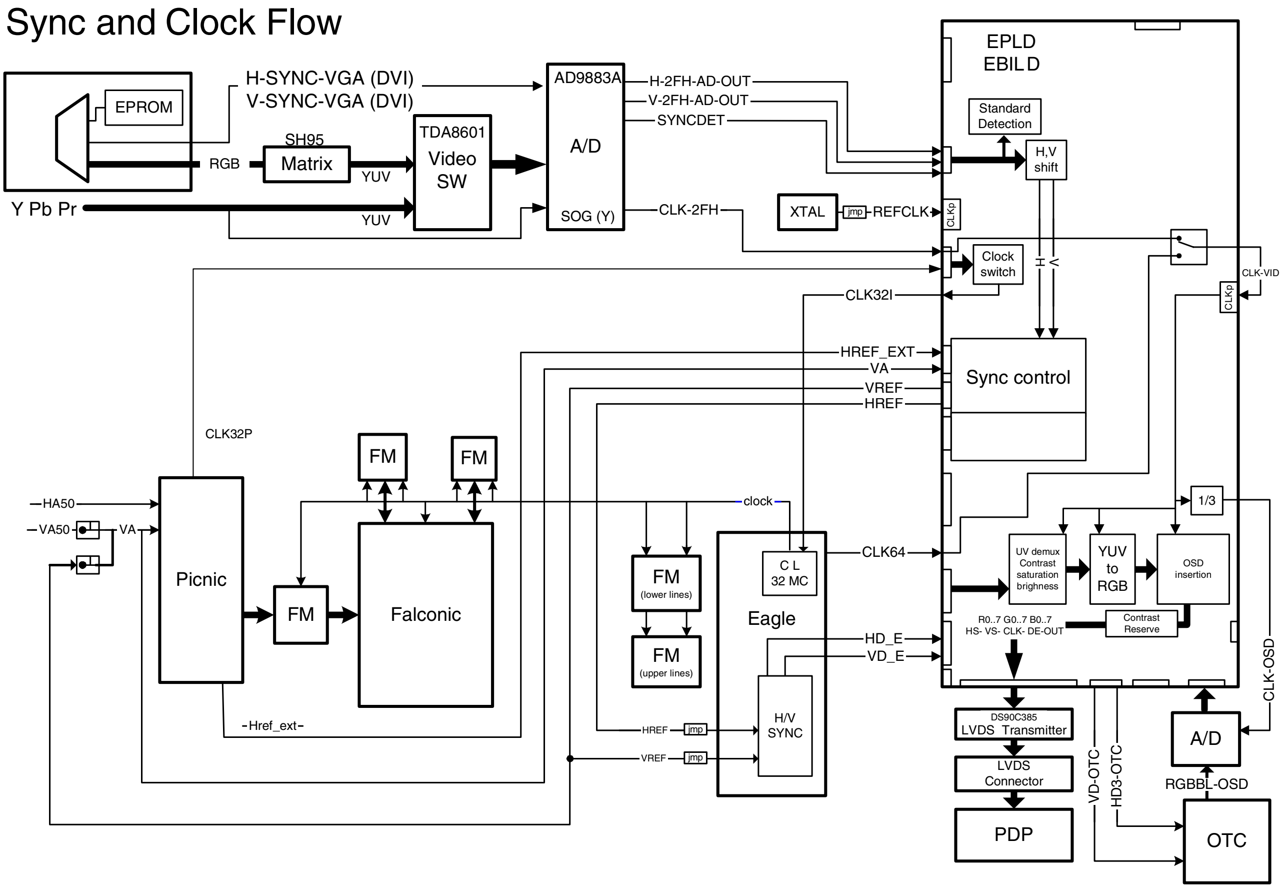
- Via R3765 and R3775, each stabilised supply voltage line (via items 7735 and 7745) is checked on deviations.
- Via R3770/3771/3780/3781, each amplifier output is checked for DC-voltage.

Via R3765/3775, a virtual earth is imposed on point A. When one of the supply voltages deviates, a DC voltage will occur on this point. If point A is positive, T7751 will conduct. If it is negative, T7761 will conduct.
Both cases will make T7735 conduct, so that the DC-PROT signal will be made high. This ensures that the power supply is rapidly trimmed back.
Capacitor C2760 will ensure that only DC-signals at point A will activate the protection.

9.7 Synchronisation

9.7.1 Introduction

Through the chassis, the synchronisation is complicated because the PDP display needs another number of pixel per line (852) and lines per frame (480). Therefore, there is a different sync flow for 1fH, 2fH, or 3fH inputs.


Sync and Clock Flow
EPROM
RGB
Y Pb Pr
H-SYNC-VGA (DVI)
V-SYNC-VGA (DVI)
SH95
Matrix
YUV
YUV
TDA8601
Video SW
AD9883A
A/D
SOG (Y)
H-2FH-AD-OUT
V-2FH-AD-OUT
SYNCDET
CLK-2FH
XTAL
jmp
REFCLK
CLKp
EPLD
EBILD
Standard Detection
H,V shift
Clock switch
H
V
CLK-VID
CLKp
CLK32I
HREF_EXT
VA
VREF
HREF
Sync control
CLK32P
HA50
VA50
VA
Picnic
FM
FM
FM
Falconic
clock
FM (lower lines)
FM (upper lines)
C L 32 MC
Eagle
CLK64
HD_E
VD_E
H/V SYNC
HREF
jmp
VREF
jmp
Href_ext
1/3
UV demux Contrast saturation brighness
YUV to RGB
OSD insertion
R0..7 G0..7 B0..7 HS- VS- CLK- DE-OUT
Contrast Reserve
CLK-OSD
DS90C385
LVDS Transmitter
LVDS Connector
PDP
VD-OTC
HD3-OTC
A/D
RGBBL-OSD
OTC

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101103

Figure 9-11 Sync and clock flow

9.7.2 Sync Flow 1fH Inputs

1fH Sync Signals

- At the 1fH side, the HIP is detecting the incoming video signal and provides a H_A / V_A (Horizontal / Vertical Acquisition sync) pulse. This is the sync input for the FBX.
- The flywheel of the PICNIC gives a 1fH sync H_REF_EXT to the EBILD, together with the V_A pulse.
- These are switched in the EBILD and sent to Eagle (H_REF and V_REF).
- The Eagle delivers new sync pulses HD_E and VD_E converted to the new line and frame sequence of the PDP 3fH. The PDP displays in 50 or 60 Hz, 480 lines per field and 852 samples per line.
- The EBILD delivers sync pulses to the OTC for OSD and TXT (VD-OTC and HD3-OTC). Note that the OSD has a field freq of 50/60Hz.

1fH Clock Signals

- The PICNIC delivers a 32 MHz clock (CLK32P) to the EBILD synchronised with H pulses.
- The EBILD switches this signals to the Eagle (CLK32I).
- The Eagle delivers a clock signal for the FALCONIC and the field memories.
- The Eagle delivers a 64 MHz clock to the EBILD (CLK64).

9.7.3 Sync Flow 2fH Inputs

2fH Sync Signals

- The input signals do not come via the HIP and PICNIC, but via the AD9883A. This AD converter delivers H and V sync signals to the EBILD (H-2FH-AD-OUT and V-2FH-AD-OUT).
- These inputs are used for standard detection and H and V shift.
- The EBILD divides the pulses by two, and switches the H and V syncs to the Eagle (H_ref and V_ref).
- The Eagle delivers new sync pulses HD_E and VD_E converted to the new line and frame sequence of the PDP 3fH. The PDP displays in 50 or 60 Hz, 480 lines per field and 852 samples per line.
- The EBILD delivers sync pulses to the OTC for OSD and TXT (VD_OTC and HD3_OTC). Note that the OSD has a field freq of 50/60Hz.
- The PICNIC receives V_ref pulses as reference; it is free running for horizontal sync.

2fH Clock Signals

- The AD9883A gives his sample clock (CLK-2FH) to the EBILD, this clock is synchronised with the incoming H pulses.
- The EBILD switches this pulse to the Eagle (CLK32I).

- The Eagle delivers a clock signal for the FALCONIC and the field memories.
- The Eagle delivers a 64MHz clock to the EBILD (CLK64).

9.7.4 Sync Flow 3fH input sync signals

3fH Sync Signals

- The input signals do not come via the HIP and PICNIC but via the AD9883A. This AD converter delivers H and V sync signals to the EBILD (H-2FH-AD-OUT and V-2FH-AD-OUT).
- The sync signals are the same as with 2fH inputs.

3fH Clock Signals

- The master clock is delivered by the AD9883, same as 2fH inputs; The EBILD uses this clock as sample clock for video control.

9.8 Control

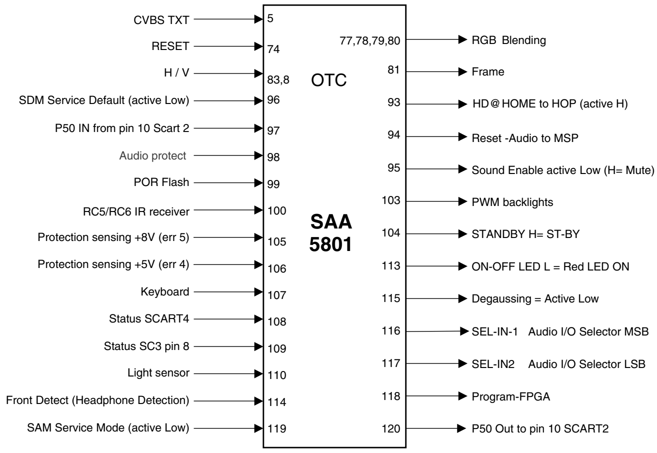
CVBS TXT
RESET
H / V
SDM Service Default (active Low)
P50 IN from pin 10 Scart 2
Audio protect
POR Flash
RC5/RC6 IR receiver
Protection sensing +8V (err 5)
Protection sensing +5V (err 4)
Keyboard
Status SCART4
Status SC3 pin 8
Light sensor
Front Detect (Headphone Detection)
SAM Service Mode (active Low)
5
74
83,8
96
97
98
99
100
105
106
107
108
109
110
114
119
OTC
SAA
5801
77,78,79,80
81
93
94
95
103
104
113
115
116
117
118
120
RGB Blending
Frame
HD@HOME to HOP (active H)
Reset -Audio to MSP
Sound Enable active Low (H= Mute)
PWM backlights
STANDBY H= ST-BY
ON-OFF LED L = Red LED ON
Degaussing = Active Low
SEL-IN-1 Audio I/O Selector MSB
SEL-IN2 Audio I/O Selector LSB
Program-FPGA
P50 Out to pin 10 SCART2

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Figure 9-12 OTC interfacing

9.8.1 "Switch On" Behaviour

See paragraph "Power States" in this chapter.

9.8.2 OTC Flash

See paragraph "Software Upgrading" in this chapter.

9.8.3 Keyboard

The local keyboard is connected to P2-4 (pin 107) of the OTC, which is an A/D pin. Each key matches with a range of values within the A/D converter.

9.8.4 LED Control

In USA the same LED configuration is used as in Europe, the 2 colour LED.

Table 9-7 LED control

Condition	Two colour LED
On	Green
Off	No indication
Low power standby	No indication
Standby	Red
Semi-standby	Orange (red and green)
Reaction on RC in On-state	Orange (green and (red blinking))
Reaction on RC in Standby	Red
Reaction on RC in Semi-standby	Orange (green and (red blinking))
Protection	Red blinking

9.9 Protections

9.9.1 General

Under certain fault conditions, as described below, the set must go into the "protection state". This means that the set is switched into standby and displays a blinking LED. These protections are introduced in order to avoid unacceptable temperature rises and burning hazards. The failure cause will be identified and put into the NVM error buffer. For the customer, it is made impossible to switch "on" the set with his remote control.
On the other hand, it must be possible to read out the error codes from NVM while using a Dealer Service Tool or a ComPair tool, or to de-activate the protection states in Service Default Mode. It is possible to enter ComPair from protection but not from standby.
The protection algorithms are activated/de-activated at a certain stage in the "start-up/switch-off" sequence of the set (see also figure "Step wise start-up diagram" in chapter "Service Modes, Error Codes, and Fault Finding").

9.9.2 Hardware protections

See also the chapter Service Modes, Error Codes and Fault Finding of this manual.

Protections with detection via I/O lines of the OTC

8V protection
The +8V information is an ADC input of the microprocessor. This input can sense the absence of the +8V. The failure is filtered by software and put in the error buffer for serviceability. The set must go into protection.

5V protection
The microprocessor can sense the absence of the +5V. The failure must be filtered by software and put in the error buffer for serviceability. The set must go into protection.
Because of the architectural set-up of the power supply (the +5V supply is linked to the +5V2 standby supply of the OTC), it is not possible to detect a complete absence of the +5V and to signal it in software. Therefore, no software error indication will be available when there is a complete short circuit of the +5V supply.
What happens is this:

- When the +5V_SW is overloaded (short circuit), this will also overload the +5V2. The supply that feeds the OTC, the standby supply, hiccups. As a result, the +5V2 is not overloaded anymore and can rise again. Because of the dip in the OTC supply voltage, the OTC will get a reset and restarts the set. If the fault cause is still present at that start-up, the system will restart all over and the set will be in a hiccup mode. This is not a problem if the duty cycle is low enough.
- If however, the short circuit on the +5V is such that the +5V2 supply is not overloaded and the remaining voltage on the +5V2 is still high enough to keep the OTC alive, the short circuit on the +5V can be detected via the ADC input

of the OTC the same way the +8V protection is implemented. The set must also go into protection.

If a +8V or a +5V dropout is detected, the protection input should be checked several times, every 200ms. If the protection input is active for five consecutive times, the set must go into protection.

DC protection (from audio amplifier)
Because of the symmetrical supply of the audio amplifier, a DC-blocking capacitor between the amplifier and the speaker is not necessary. However, it is still necessary to protect the speaker for DC voltages. If a DC protection is activated, the OTC will set the TV in protection. A specific error code is **not** generated. For a detailed description, see paragraph "Audio Amplifier".

Protections with detection via I2C bus

Tuner protection
The tuner is supplied by the +5V_SW, which is delivered by the standby supply. When this supply is short-circuited, the standby supply will hiccup. If the tuner does not acknowledge on its I2C address for five consecutive times, the set goes into protection and error "13" is generated. Maximum time allowed before protection: 1.5 s.

9.10 PDP Panel

9.10.1 Introduction

The PDP, which is used in this chassis, is a product of SDI (Samsung Display Industry).
When defect, a new panel must be ordered, and after receipt, the defective panel must be send for repair in the packing (flight case) of the new ordered panel.

9.10.2 Operation

Plasma displays work by applying a voltage between two transparent display electrodes on the front glass plate of the display. The electrodes are separated by an MgO dielectric layer and surrounded by a mixture of neon and xenon gases. When the voltage reaches the 'firing level', a plasma discharge occurs on the surface of the dielectric, resulting in the emission of ultra violet light.
This UV light then excites the phosphor material at the back of the cell and emits visible light. Each cell or sub-pixel has red, blue or green phosphor material and three sub-pixels combine to make up a pixel. The intensity of each colour is controlled by varying the number and width of voltage pulses applied to the sub-pixel during a picture frame. This is implemented by dividing each picture frame into sub-frames. (For 50 Hz-mode there are 12 sub frames, for the 60 Hz-mode there are 10 sub frames). During a sub-frame, all cells are first addressed - those to be lit are pre-charged to a specific address voltage - then during the display time the display voltage is applied to the entire screen lighting those that were addressed.
Each sub-frame has a weighting-factor. (Time-entity depends on size and number of pixels on the screen). This is a purely digital PWM control mechanism, which is a key advantage as it eliminates any unnecessary digital to analogue conversions.

9.10.3 LVDS Interface

- Standard single ended signal (TTL).
  - This requires 28 signal lines and more than 14 grounds.
  - Single ended signals up to 3 V.
  - Wide flat ribbon cable.
  - EMI/EMC problems.
  - Feasible up to VGA/NTSC resolution (limited to 250 Mb/s).
- LVDS
  - Five low voltage (350 mV) differential pairs: one clock pair and four data pairs.
  - Five grounds.
  - EMI/EMC friendly.
  - WXGA and HD-1280x720p (up to 1 Gb/s).

LVDS offers superior performance compared to the standard single ended signal (TTL).
It is even "protocol independent" so it requires no software.

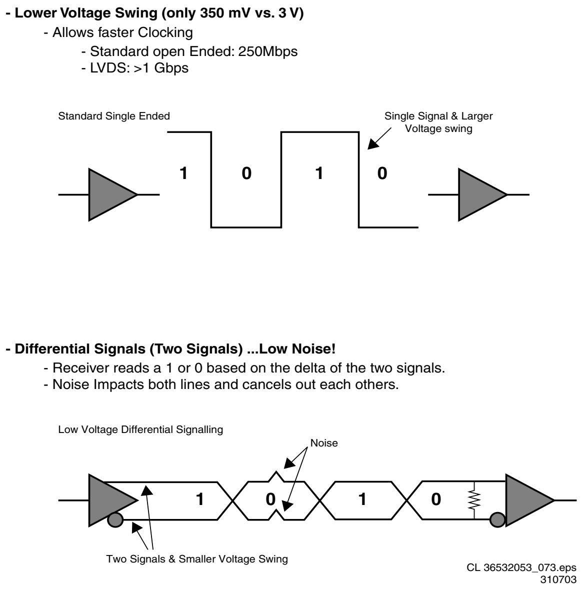
- Lower Voltage Swing (only 350 mV vs. 3 V)
- Allows faster Clocking
- Standard open Ended: 250Mbps
- LVDS: >1 Gbps
Standard Single Ended
Single Signal & Larger Voltage swing
1
0
1
0
- Differential Signals (Two Signals) ...Low Noise!
- Receiver reads a 1 or 0 based on the delta of the two signals.
- Noise Impacts both lines and cancels out each others.
Low Voltage Differential Signalling
Noise
1
0
1
0
Two Signals & Smaller Voltage Swing
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Figure 9-13 LVDS technology

9.11 Software Upgrading

9.11.1 Introduction

In this chassis, you can **upgrade** the software via ComPair. This offers the possibility, to replace the entire SW image without having to remove the flash-memory from its socket. You can find more information on how this procedure works in the ComPair file. It is possible that not all sets are equipped with the hardware, needed to make software upgrading possible. To speed up the programming process, the firmware of the ComPair interface can be upgraded. See Chapter "Service Modes ...", paragraph "ComPair" - "How To Order" for the order number.

9.11.2 Specifications

Some specifications are:

- The upgrade feature makes use of I2C to transfer a new SW image (4 MB).
- It requires the ComPair interface Box (RS232 to I2C).
- The I2C bus is available at the rear side of the set.
- It uses a ZIP-compressed BIN image to speed up the transfer process (1/2 size).
- The complete procedure takes less than 20 minutes with an upgraded ComPair interface:
  - About 90 seconds to erase a 4 MB flash-memory.
  - Less than 10 minutes to transfer the file (max 1.9 MB).
  - About 5 minutes to decompress/program the flash-memory.

Note: It takes about 85 minutes with a standard interface.
Constraints:

- Needs the EPG flash memory, so this device must be placed also for non-EPG regions like AP and USA.

Advantages:
- Flexibility.
- No change in internal ROM (IROM) required (IROM not used).
- Flexibility to change of code flash manufacturer as the "flash driver" is part of the bootstrap code (part of the main software image).

9.11.3 Concept

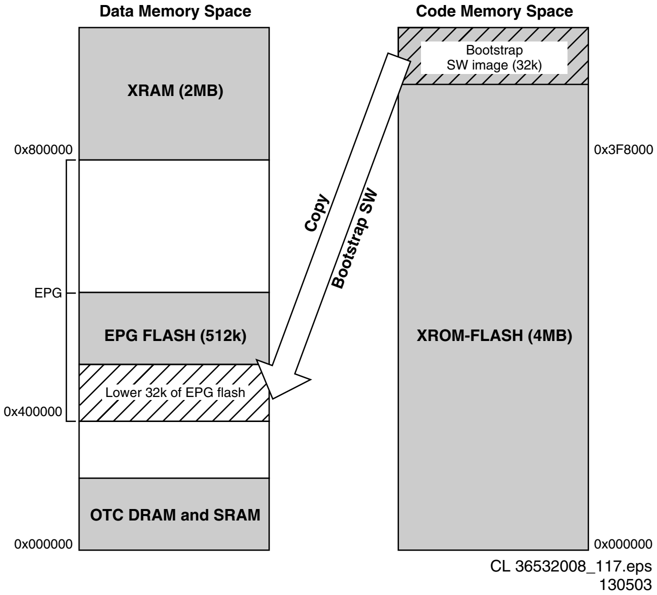

Data Memory Space
Code Memory Space
XRAM (2MB)
0x800000
EPG
EPG FLASH (512k)
Lower 32k of EPG flash
0x400000
OTC DRAM and SRAM
0x000000
Bootstrap
SW image (32k)
Copy
Bootstrap SW
0x3F8000
XROM-FLASH (4MB)
0x000000
CL 36532008_117.eps
130503

Figure 9-14 Memory diagram (initial situation)

The architecture of the OTC microprocessor does not allow the execution of code from the external RAM. It is also impossible to write data in the code memory space (there is no instruction to write data to those memory locations).
The OTC normally boots from its internal ROM (IROM) but modification of the **internal** ROM software would be too expensive. Fortunately, the chip architecture allows also the booting from **external** ROM (XROM).
The IROM is mapped on the first 32 kB of the ROM address space. The XROM is mapped starting at the same address. Therefore, the lower 32 kB of XROM overlaps the IROM memory space.
Via an external pin (EA), it is possible to reveal the XROM memory below the IROM and so boot using this hidden software. This is the first trick used by the software upgrade procedure.

To be able to write to the CODE flash, it is required to address the device via the RAM address space. Today all RAM but also the EPG flash is mapped on the RAM address space. Devices are mapped to the right address space via a few control lines (kind of chip select). By exchanging the control lines between the EPG and the CODE flash, it is possible to map the CODE flash in the RAM address space and at the same time use the EPG flash to execute software. This is the second trick used by the procedure.

The main idea is to use the EPG flash to boot up the software upgrade procedure.
Therefore, the complete procedure relies on the presence of that one.

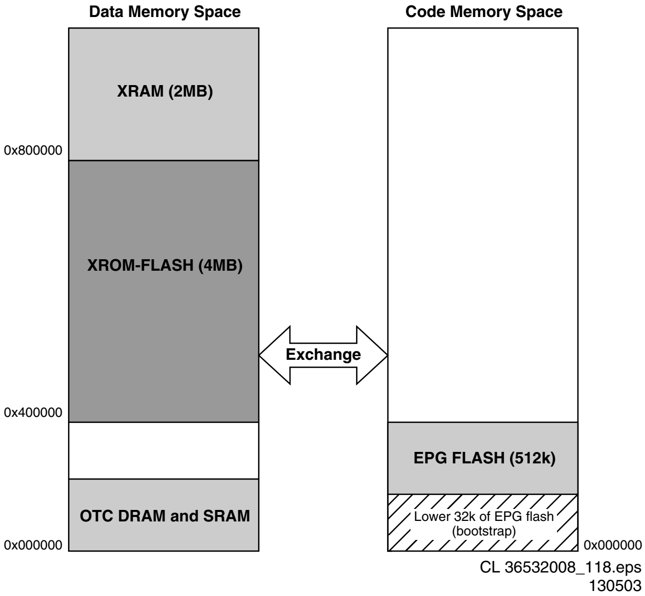

Data Memory Space
Code Memory Space
XRAM (2MB)
0x800000
XROM-FLASH (4MB)
Exchange
0x400000
OTC DRAM and SRAM
0x000000
EPG FLASH (512k)
Lower 32k of EPG flash
(bootstrap)
0x000000
CL 36532008_118.eps
130503

Figure 9-15 Memory diagram (after bus exchange)

In order to be able to write new software code to the set, we therefore must copy the bootstrap code to a free memory area (e.g. the EPG flash-memory) in order to be able to execute "externally" the upgrade procedure code.
Solution: swap the software code to the data memory space (via setting jumper/switch 1402) and boot from the EPG FLASH.
After the zip-file uploading and (internally) software unpacking, the old situation must be restored.

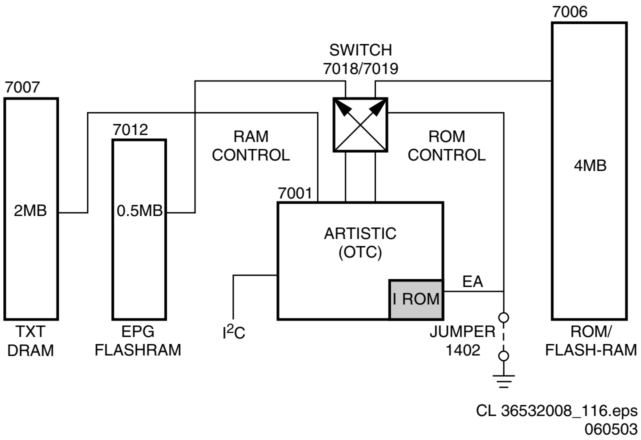

7006
SWITCH
7018/7019
7007
7012
RAM
CONTROL
ROM
CONTROL
4MB
7001
2MB
0.5MB
ARTISTIC
(OTC)
EA
I ROM
TXT
DRAM
EPG
FLASHRAM
I2C
JUMPER
1402
ROM/
FLASH-RAM
CL 36532008_116.eps
060503

Figure 9-16 Software upgrade set-up

A jumper/switch on the SSP will swap the devices and boot "externally" via the EPG flash. Then, via ComPair, the download command is given. The new (ZIP) image will be first downloaded to the OTCs external RAM (TXT DRAM). Then a checksum on the ZIP image will be computed on both sides (PC and TV) and compared.
If everything is correct, the CODE flash will be erased and the new image will be transferred and unzipped (= decompressed) into the flash. This is done via the bootstrap code. A second checksum will be computed on the decompressed image.
After the upgrade, the EPG flash will be cleared again.

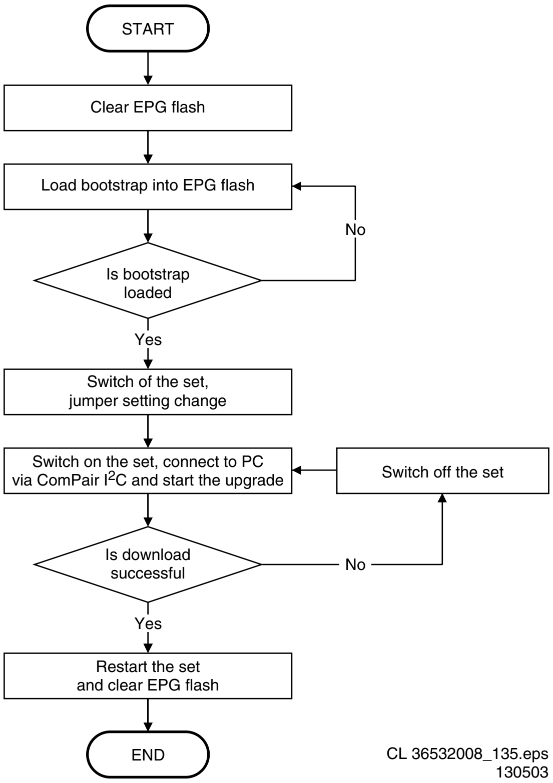

START
Clear EPG flash
Load bootstrap into EPG flash
No
Is bootstrap loaded
Yes
Switch of the set, jumper setting change
Switch on the set, connect to PC via ComPair I2C and start the upgrade
Switch off the set
Is download successful
No
Yes
Restart the set and clear EPG flash
END
CL 36532008_135.eps
130503

Figure 9-17 Software upgrade flow chart

9.12 Abbreviation list

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
ANR	Automatic Noise Reduction: one of the algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
Artistic	See OTC 2.5: main processor
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information
ATSC	Advanced Television Systems Committee
ATV	See Auto TV
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way
AV	External Audio Video
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CL	Constant Level: audio output to connect with an external amplifier
ComPair	Computer aided rePair
CSM	Customer Service Mode
CLK_2FH	Clock output AD converter
CTI	Colour Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	See "E-DDC"
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFU	Directions For Use: owner's manual
DNR	Digital Noise Reduction: noise reduction feature of the set
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool: special remote control designed for service technicians

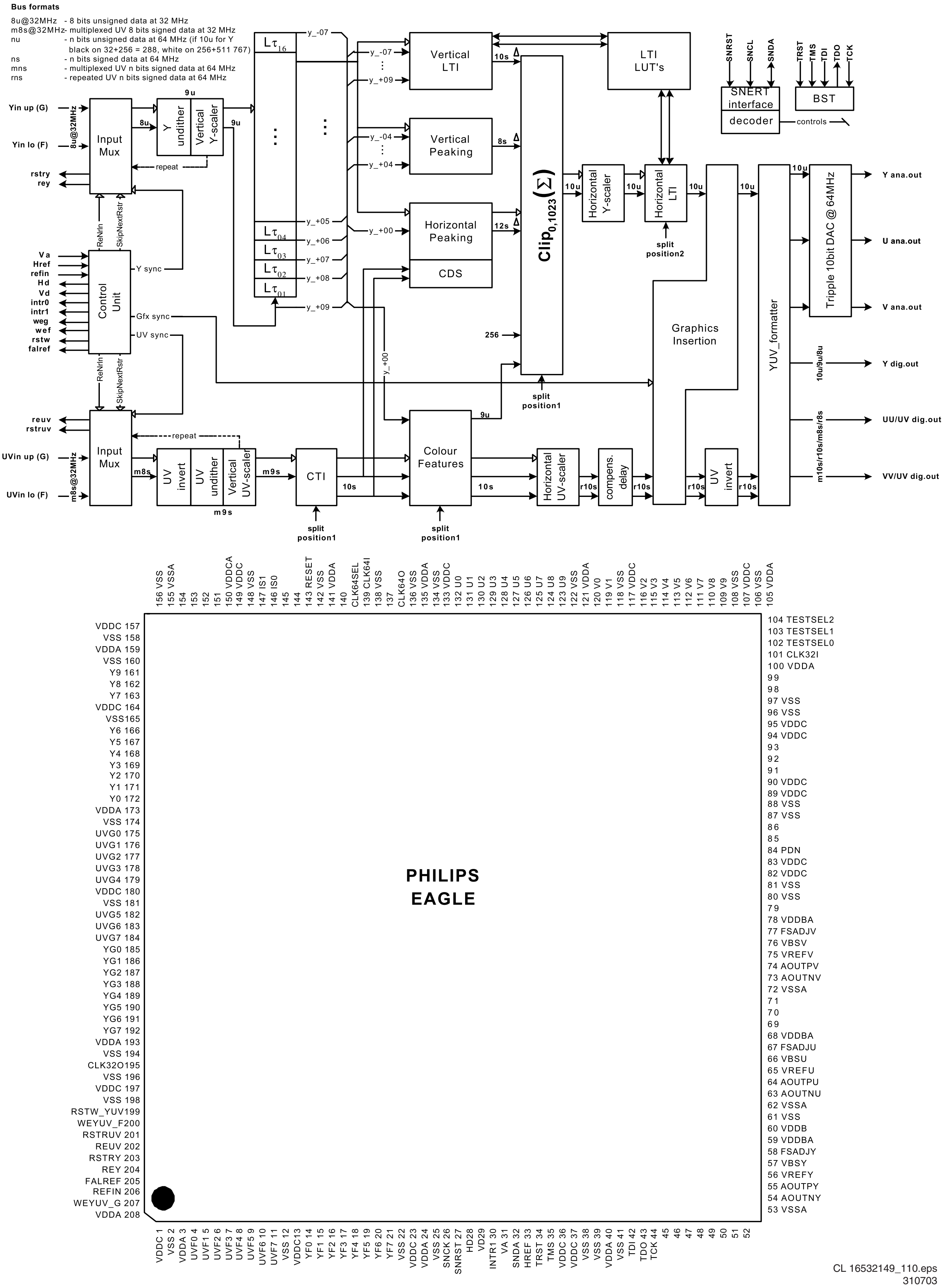
DVD	Digital Versatile Disc
DVI(-d)	Digital Visual Interface (d= digital only)
Eagle	Feature box IC performing peaking, zooming and subpixel LTI in both horizontal and vertical directions, CTI, and other colour features
EBILD	Eagle Based Intelligent LCD Driver (Programmed EPLD)
E-DDC	Enhanced Display Data Channel (VESA standard for communication channel and display). Using E-DDC, the video source can read the EDID information form the display.
EDID	Extended Display Identification Data (VESA standard)
EEPROM	Electrically Erasable and Programmable Read Only Memory
EMI	Electro Magnetic Interference
EPLD	Erasable Programmable Logic Device
EU	Europe
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FALCONIC	SAA4992H, feature box IC which performs Digital Natural Motion, 3DNR vertical zoom, and vertical peaking
FBL	Fast BLanking: DC signal accompanying RGB signals
FBX	Feature BoX: part of the small signal board /separate module which contains 100 Hz processing, extra features and AutoTV algorithms (FBX6= based on PICNIC, FBX7= based on PICNIC and Eagle)
FDS	Full Dual Screen (same as FDW)
FDW	Full Dual Window (same as FDS)
FLASH	FLASH memory
FM	Field Memory or Frequency Modulation
FTV	Flat TeleVision
Gb/s	Giga bits per second
G-TXT	Green TeleteXT
H	H_sync to the module
H_2FH_AD_OUT	H-sync output from AD converter
HDI	High Definition Interface
H-DVI	H_sync from DVI to RGB converter chip
HIP	High-end video Input Processor (TDA9320): video and chroma decoder.
HOP	High-end video Output Processor (TDA9330): video, sync, and geometry controller
HP	HeadPhone
H_DVI	H-sync from DVI-to-RGB converter chip
H_SYNC_VGA	H-sync on VGA connector
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
I2S	Integrated IC Sound bus
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt Request
ITV	Institutional TeleVision, TV sets for hotels, hospitals etc.
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
LATAM	Latin America
LCD	Liquid Crystal Display
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Loudspeaker
LVDS	Low Voltage Differential Signalling
Mbps	Mega bits per second
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
MPEG	Motion Pictures Experts Group
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
NTC	Negative Temperature Coefficient, non-linear resistor
NTSC	National Television Standard Committee. Colour system mainly used in North America and Japan. Colour carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non-Volatile Memory: IC containing TV related data such as alignments
O/C	Open Circuit
OSD	On Screen Display
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)
OTP	One Time Programmable
P50	Project 50: communication protocol between TV and peripherals
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier= 4.433619 MHz) and South America (colour carrier PAL M= 3.575612 MHz and PAL N= 3.582056 MHz)
PCB	Printed Circuit Board (same as "PWB")
PCM	Pulse Code Modulation
PDP	Plasma Display Panel
PFC	Power Factor Corrector (or Pre-conditioner)
PICNIC	Peripheral Integrated Combined Network IC (SAA4978): main IC for 100 Hz features and feature processing
PIP	Picture In Picture
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
POR	Power On Reset, signal to reset the P
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PTC	Positive Temperature Coefficient, non-linear resistor
PWB	Printed Wiring Board (same as "PCB")
PWM	Pulse Width Modulation
RAM	Random Access Memory
RGB	Red, Green, and Blue. The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced.
RGB_DVI	RGB video input on DVI converter chip
RGB_VGA	RGB video input on VGA connector

RC	Remote Control
RC5 / RC6	Signal protocol from the remote control receiver
RESET	RESET signal
ROM	Read Only Memory
R-TXT	Red TeleteXT
SAM	Service Alignment Mode
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
SCL	Serial Clock I2C
SCL-F	CLock Signal on Fast I2C bus
SD	Standard Definition
SDA	Serial Data I2C
SDA-F	DAta Signal on Fast I2C bus
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers= 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switched Mode Power Supply
SOG	Sync On Green
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
SSB	Small Signal Board
SSP	Small Signal Panel
STBY	STandBY
SUB_Y/U/V_2FH	Y/U/V input from I/O cel
SOGIN	Sync-On-Green input AD converter
SOGOUT	Sync-On-Green output AD converter
SVGA	800x600 (4:3)
SVHS	Super Video Home System
SW	Software
SXGA	1280x1024
SYNCDET	SOGOUT from AD converter
TFT	Thin Film Transistor
THD	Total Harmonic Distortion
TXT	TeleteXT
TXT-DW	Dual Window with TeleteXT
uP	Microprocessor
U_2FH_0..7	U digital output AD converter port 0 to 7 (7= MSB)
UXGA	1600x1200 (4:3)
V	V-sync to the module
V_2FH_0..7	V digital output AD converter port 0 to 7 (7= MSB)
V_2FH_AD_OUT	V-sync output from AD converter
VCR	Video Cassette Recorder
V_DVI	V-sync from DVI-to-RGB converter chip
VESA	Video Electronics Standards Association
VGA	640x480 (4:3)
VL	Variable Level out: processed audio output toward external amplifier
V_SYNC_VGA	V-sync on VGA connector
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
WXGA	1280x768 (15:9)
XTAL	Quartz crystal
XGA	1024x768 (4:3)
XVGA	1024x768 (4:3)
Y	Luminance signal
Y_2FH_0..7	Y digital output AD converter port 0 to 7 (7= MSB)
Y/C	Luminance (Y) and Chrominance (C) signal
YPbPr	Component video. Luminance and scaled colour difference signals (B-Y and R-Y)
YUV	Component video
YUV_2FH	YUV video input AD converter
YUV_VGA	YUV output from matrix (RGB to YUV)

9.13 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.13.1 Diagram B3C, T8F24EF (IC7724)


Bus formats
8u@32MHz - 8 bits unsigned data at 32 MHz
m8s@32MHz- multiplexed UV 8 bits signed data at 32 MHz
nu - n bits unsigned data at 64 MHz (if 10u for Y black on 32+256 = 288, white on 256+511 767)
ns - n bits signed data at 64 MHz
mns - multiplexed UV n bits signed data at 64 MHz
rns - repeated UV n bits signed data at 64 MHz
Yin up (G)
Yin lo (F)
8u@32MHz
rstry
rey
Input Mux
8u
Y undither
Vertical Y-scaler
9u
repeat
Lτ16
Lτ04
Lτ03
Lτ02
Lτ01
y_-07
y_+09
y_-04
y_+04
y_+05
y_+06
y_+07
y_+08
y_+00
Vertical LTI
Vertical Peaking
Horizontal Peaking
CDS
10s
8s
12s
Clip0,1023(Σ)
256
split position1
LTI LUT's
Horizontal Y-scaler
Horizontal LTI
split position2
10u
SNRST
SNCL
SNDA
TRST
TMS
TDI
TDO
TCK
SNERT interface
decoder
controls
BST
Tripple 10bit DAC @ 64MHz
Y ana.out
U ana.out
V ana.out
10u/9u/8u
Y dig.out
m10s/r10s/m8s/r8s
UU/UV dig.out
VV/UV dig.out
Graphics Insertion
YUV_formatter
ReNrIn
SkipNextRstr
Va
Href
refin
Hd
Vd
intr0
intr1
weg
wef
rstw
falref
Control Unit
Y sync
Gfx sync
UV sync
reuv
rstruv
UVin up (G)
UVin lo (F)
m8s@32MHz
m8s
UV invert
UV undither
Vertical UV-scaler
m9s
CTI
Colour Features
9u
Horizontal UV-scaler
compens. delay
r10s
UV invert
156 VSS
155 VSSA
154
153
152
151
150 VDDCA
149 VDDC
148 VSS
147 IS1
146 IS0
145
144
143 RESET
142 VSS
141 VDDA
140 CLK64SEL
139 CLK64I
138 VSS
137 CLK64O
136 VSS
135 VDDA
134 VSS
133 VDDC
132 U0
131 U1
130 U2
129 U3
128 U4
127 U5
126 U6
125 U7
124 U8
123 U9
122 VSS
121 VDDA
120 V0
119 V1
118 VSS
117 VDDC
116 V2
115 V3
114 V4
113 V5
112 V6
111 V7
110 V8
109 V9
108 VSS
107 VDDC
106 VSS
105 VDDA
VDDC 157
VSS 158
VDDA 159
VSS 160
Y9 161
Y8 162
Y7 163
VDDC 164
VSS165
Y6 166
Y5 167
Y4 168
Y3 169
Y2 170
Y1 171
Y0 172
VDDA 173
VSS 174
UVG0 175
UVG1 176
UVG2 177
UVG3 178
UVG4 179
VDDC 180
VSS 181
UVG5 182
UVG6 183
UVG7 184
YG0 185
YG1 186
YG2 187
YG3 188
YG4 189
YG5 190
YG6 191
YG7 192
VDDA 193
VSS 194
CLK32O195
VSS 196
VDDC 197
VSS 198
RSTW_YUV199
WEYUV_F200
RSTRUV 201
REUV 202
RSTRY 203
REY 204
FALREF 205
REFIN 206
WEYUV_G 207
VDDA 208
104 TESTSEL2
103 TESTSEL1
102 TESTSEL0
101 CLK32I
100 VDDA
99
98
97 VSS
96 VSS
95 VDDC
94 VDDC
93
92
91
90 VDDC
89 VDDC
88 VSS
87 VSS
86
85
84 PDN
83 VDDC
82 VDDC
81 VSS
80 VSS
79
78 VDDBA
77 FSADJV
76 VBSV
75 VREFV
74 AOUTPV
73 AOUTNV
72 VSSA
71
70
69
68 VDDBA
67 FSADJU
66 VBSU
65 VREFU
64 AOUTPU
63 AOUTNU
62 VSSA
61 VSS
60 VDDB
59 VDDBA
58 FSADJY
57 VBSY
56 VREFY
55 AOUTPY
54 AOUTNY
53 VSSA
PHILIPS EAGLE
VDDC 1
VSS 2
VDDA 3
UVF0 4
UVF1 5
UVF2 6
UVF3 7
UVF4 8
UVF5 9
UVF6 10
UVF7 11
VSS 12
VDDC13
YF0 14
YF1 15
YF2 16
YF3 17
YF4 18
YF5 19
YF6 20
YF7 21
VSS 22
VDDC 23
VDDA 24
VSS 25
SNCK 26
SNRST 27
HD28
VD29
INTR1 30
VA 31
SNDA 32
HREF 33
TRST 34
TMS 35
VDDC 36
VDDC 37
VSS 38
VSS 39
VDDA 40
VSS 41
TDI 42
TDO 43
TCK 44
45
46
47
48
49
50
51
52

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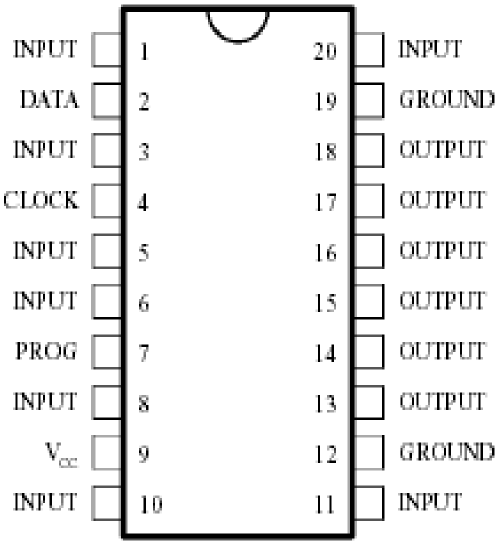
310703

Figure 9-18 Internal Block Diagram and Pin Configuration

9.13.2 Diagram B14A, TEA6415 (IC7I24)


INPUT 1
DATA 2
INPUT 3
CLOCK 4
INPUT 5
INPUT 6
PROG 7
INPUT 8
V_{cc} 9
INPUT 10
INPUT 11
GROUND 12
OUTPUT 13
OUTPUT 14
OUTPUT 15
OUTPUT 16
OUTPUT 17
OUTPUT 18
GROUND 19
INPUT 20

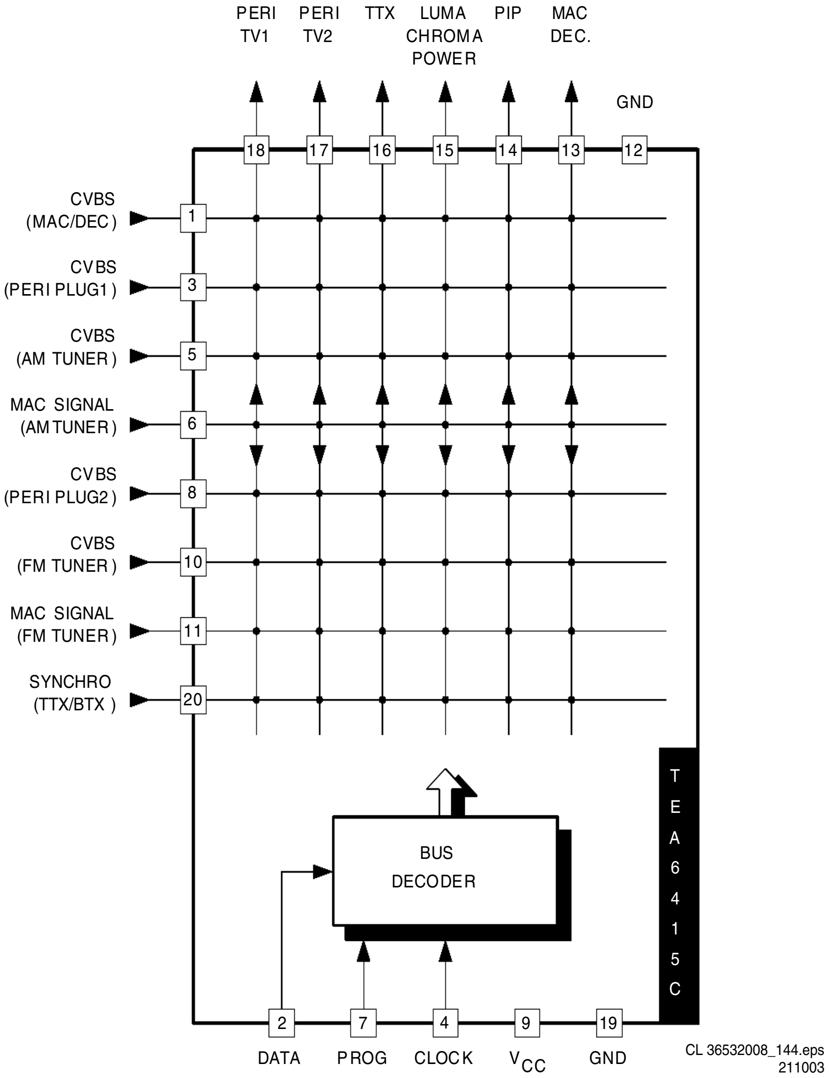
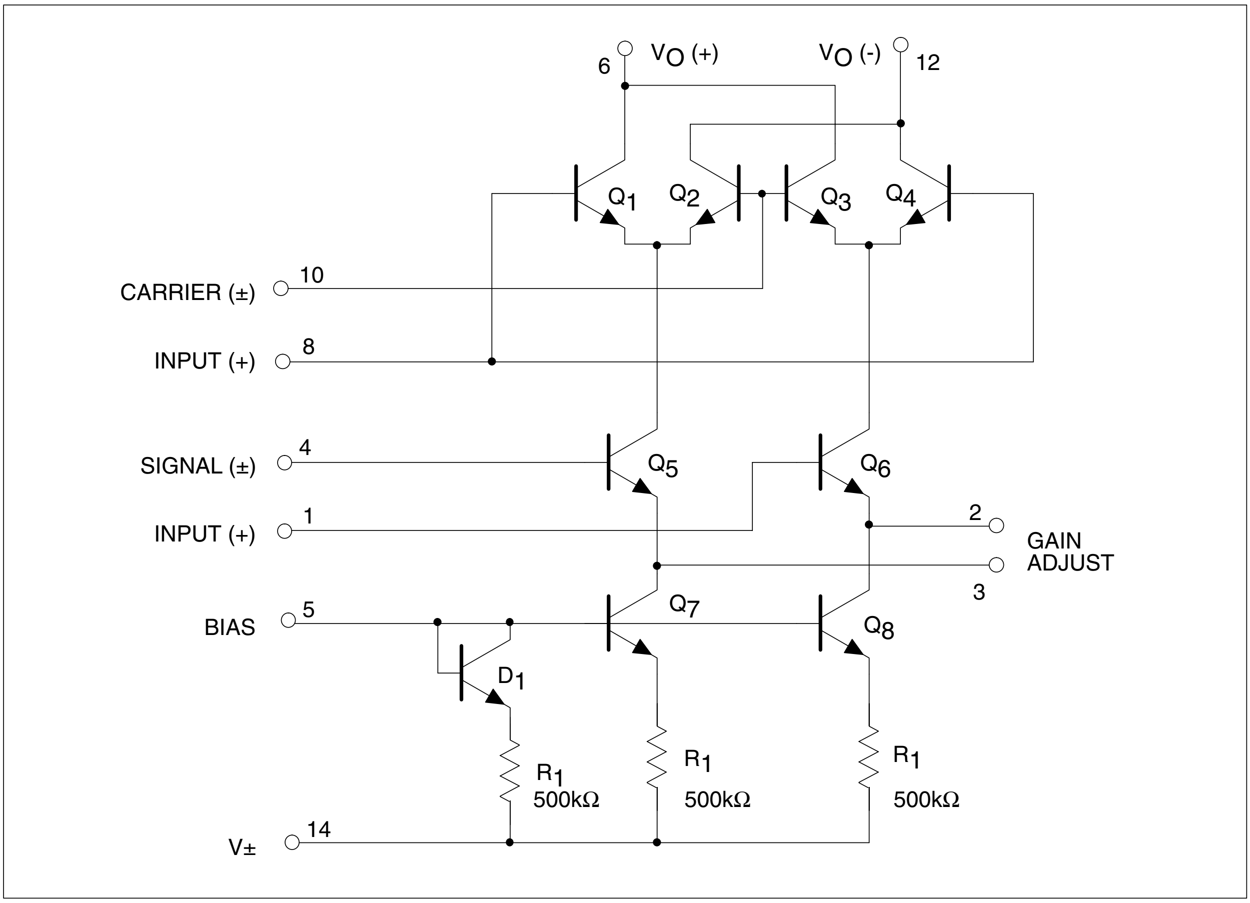

PERI TV1
PERI TV2
TTX
LUMA CHROMA POWER
PIP
MAC DEC.
GND
18
17
16
15
14
13
12
CVBS (MAC/DEC)
1
CVBS (PERI PLUG1)
3
CVBS (AM TUNER)
5
MAC SIGNAL (AM TUNER)
6
CVBS (PERI PLUG2)
8
CVBS (FM TUNER)
10
MAC SIGNAL (FM TUNER)
11
SYNCHRO (TTX/BTX)
20
BUS DECODER
TEA6415C
2
7
4
9
19
DATA
PROG
CLOCK
V_{CC}
GND
CL 36532008_144.eps
211003

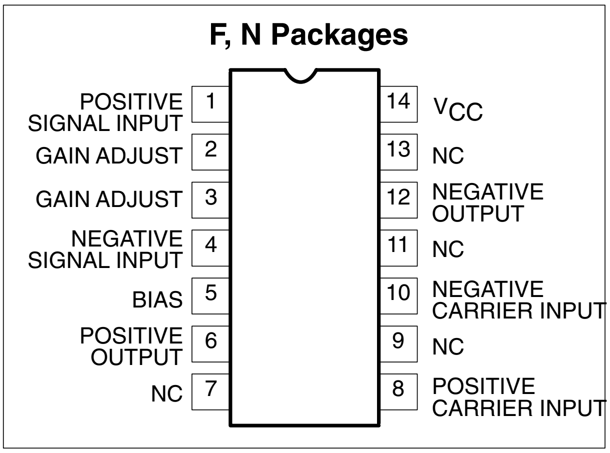
Figure 9-19 Internal Block Diagram and Pin Configuration

9.13.3 Diagram B16DE, MC1496D (IC7H40, 7H50, 7H60)

EQUIVALENT SCHEMATIC


6
V_O (+)
V_O (-)
12
Q_1
Q_2
Q_3
Q_4
CARRIER (±)
10
INPUT (+)
8
SIGNAL (±)
4
Q_5
Q_6
INPUT (+)
1
2
GAIN
ADJUST
3
BIAS
5
Q_7
Q_8
D_1
R_1
500kΩ
R_1
500kΩ
R_1
500kΩ
V±
14

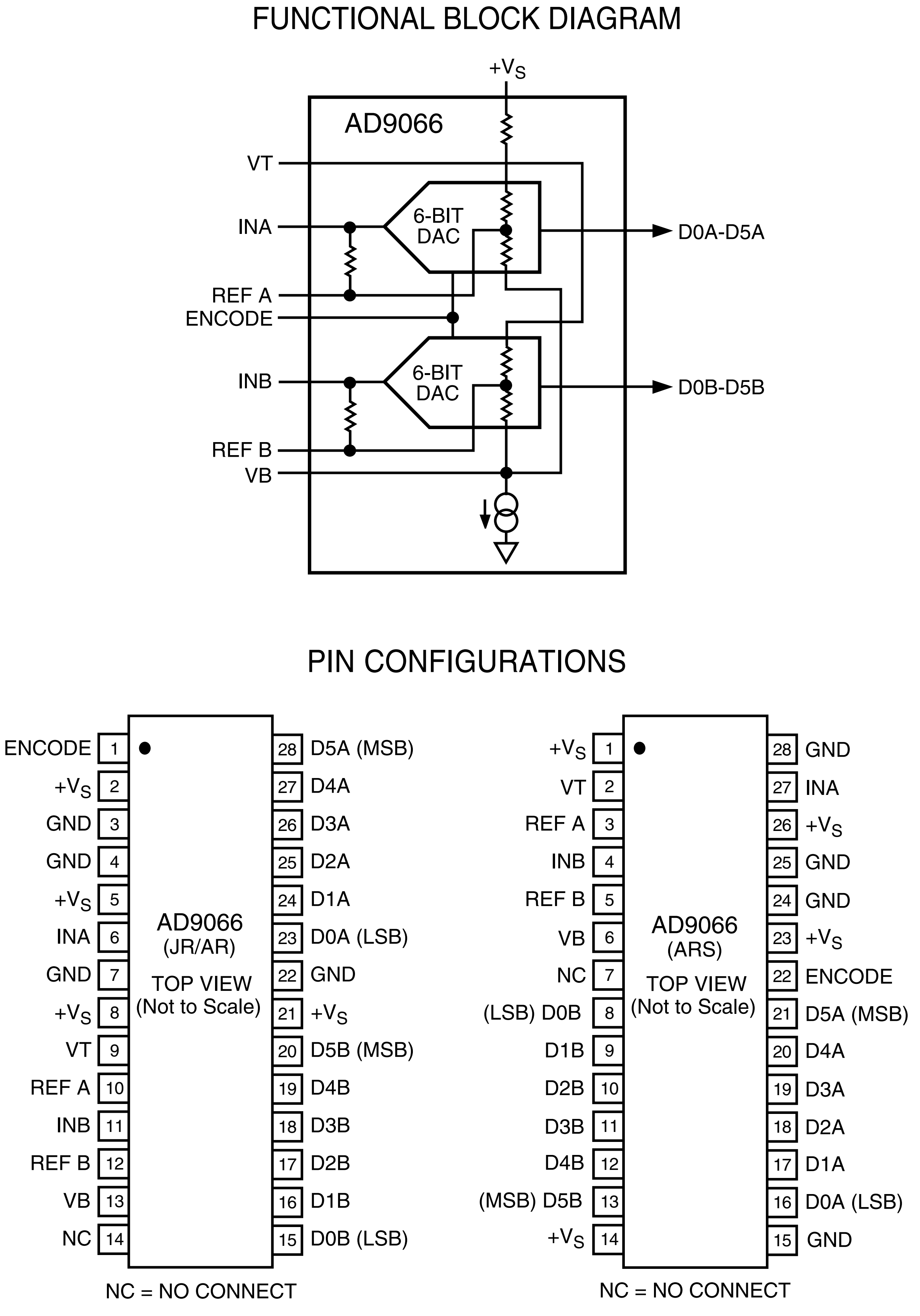
PIN CONFIGURATION


F, N Packages
POSITIVE SIGNAL INPUT
1
GAIN ADJUST
2
GAIN ADJUST
3
NEGATIVE SIGNAL INPUT
4
BIAS
5
POSITIVE OUTPUT
6
NC
7
14
V_{CC}
13
NC
12
NEGATIVE OUTPUT
11
NC
10
NEGATIVE CARRIER INPUT
9
NC
8
POSITIVE CARRIER INPUT

CL 36532053_082.eps
170703

Figure 9-20 Internal Block Diagram and Pin Configuration

9.13.4 Diagram B19E, AD9066JR (IC7E09, 7E16)


FUNCTIONAL BLOCK DIAGRAM
+V$_S$
AD9066
VT
INA
REF A
ENCODE
INB
REF B
VB
6-BIT DAC
6-BIT DAC
D0A-D5A
D0B-D5B
PIN CONFIGURATIONS
ENCODE 1
+V$_S$ 2
GND 3
GND 4
+V$_S$ 5
INA 6
GND 7
+V$_S$ 8
VT 9
REF A 10
INB 11
REF B 12
VB 13
NC 14
28 D5A (MSB)
27 D4A
26 D3A
25 D2A
24 D1A
23 D0A (LSB)
22 GND
21 +V$_S$
20 D5B (MSB)
19 D4B
18 D3B
17 D2B
16 D1B
15 D0B (LSB)
AD9066 (JR/AR)
TOP VIEW (Not to Scale)
NC = NO CONNECT
+V$_S$ 1
VT 2
REF A 3
INB 4
REF B 5
VB 6
NC 7
(LSB) D0B 8
D1B 9
D2B 10
D3B 11
D4B 12
(MSB) D5B 13
+V$_S$ 14
28 GND
27 INA
26 +V$_S$
25 GND
24 GND
23 +V$_S$
22 ENCODE
21 D5A (MSB)
20 D4A
19 D3A
18 D2A
17 D1A
16 D0A (LSB)
15 GND
AD9066 (ARS)
TOP VIEW (Not to Scale)
NC = NO CONNECT

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220703

Figure 9-21 Internal Block Diagram and Pin Layout

10. Spare Parts List

Set Level

Various

0095	3122 128 14951	Wall mount assy
0098	3122 128 13921	Mounting kit assy
8301	3122 358 76281	Tree assy CN1-S01
8302▲	3104 311 05171	Cable 9p/860/9p
8303▲	3104 311 03611	Cable 12p/280/12p
8304▲	3122 358 76291	Tree assy A04-LS right
8305▲	3104 311 06201	Cable 8p/480/8p
8306▲	3104 311 06691	Cable 10P/340/10P
8307▲	3104 311 06701	Cable 10P/480/10P
8308▲	3104 311 06521	Cable 13P/340/13P
8309▲	3104 311 00351	Cable 3p/400/3p kr
8311▲	8204 000 76372	Cable TW.p 13/280/DF19
8345▲	3104 311 06331	Cable 3P/1700/3P kr
8388▲	3104 311 05161	Cable 8p/600/8p

Audio Amplifier [A]

Various

0302	2422 025 16846	Connector 9p m h
0303	2422 025 16702	Connector 5p m h
0304	2422 025 16543	Connector 4p m
0388	2422 025 16704	Connector 8p m
1730	4822 071 52502	Fuse 2.5A
1740	4822 071 52502	Fuse 2.5A

⊣⊢

2201	4822 126 13193	4.7nF 10% 63V
2202	4822 124 23002	10µF 20% 16V
2204	4822 126 14226	82pF 5% 50V 0603
2205	4822 126 13193	4.7nF 10% 63V
2206	4822 124 23002	10µF 20% 16V
2207	4822 126 14226	82pF 5% 50V 0603
2212	5322 126 11578	1nF 10% 50V 0603
2215	4822 126 13193	4.7nF 10% 63V
2216	4822 124 23002	10µF 20% 16V
2218	4822 126 14226	82pF 5% 50V 0603
2220	4822 126 13193	4.7nF 10% 63V
2221	4822 124 23002	10µF 20% 16V
2222	4822 126 14226	82pF 5% 50V 0603
2224	2238 586 59812	100nF 20-80% 50V 0603
2225	2238 586 59812	100nF 20-80% 50V 0603
2233	2020 552 96325	25V 68nF 10%
2234	2238 586 59812	100nF 20-80% 50V 0603
2238	2238 586 59812	100nF 20-80% 50V 0603
2239	2238 586 59812	100nF 20-80% 50V 0603
2243	2020 552 96325	25V 68nF 10%
2244	2238 586 59812	100nF 20-80% 50V 0603
2255	4822 126 14494	22nF 10% 25V 0603
2256	4822 126 14494	22nF 10% 25V 0603
2260	2238 586 59812	100nF 20-80% 50V 0603
2261	2238 586 59812	100nF 20-80% 50V 0603
2270	4822 126 14494	22nF 10% 25V 0603
2271	4822 126 14494	22nF 10% 25V 0603
2309	4822 126 14247	1.5nF 50V 0603
2310	4822 126 14226	82pF 5% 50V 0603
2315	4822 124 12084	1µF 20% 50V
2316	2238 586 59812	100nF 20-80% 50V 0603
2318	2238 586 59812	100nF 20-80% 50V 0603
2319	4822 124 12084	1µF 20% 50V
2330	2238 586 59812	100nF 20-80% 50V 0603
2334	2020 012 93764	220µF 20% 35V
2335	2238 586 59812	100nF 20-80% 50V 0603
2340	5322 126 11583	10nF 10% 50V 0603
2355	2238 586 59812	100nF 20-80% 50V 0603
2359	2238 586 59812	100nF 20-80% 50V 0603
2360	2020 012 93764	220µF 20% 35V
2365	2020 552 96326	220nF 10% 16V
2366	2020 552 96326	220nF 10% 16V
2409	4822 126 14247	1.5nF 50V 0603
2410	4822 126 14226	82pF 5% 50V 0603
2415	4822 124 12084	1µF 20% 50V
2416	2238 586 59812	100nF 20-80% 50V 0603
2418	2238 586 59812	100nF 20-80% 50V 0603
2419	4822 124 12084	1µF 20% 50V
2430	2238 586 59812	100nF 20-80% 50V 0603
2434	2020 012 93764	220µF 20% 35V
2435	2238 586 59812	100nF 20-80% 50V 0603
2440	5322 126 11583	10nF 10% 50V 0603
2455	2238 586 59812	100nF 20-80% 50V 0603
2459	2238 586 59812	100nF 20-80% 50V 0603
2460	2020 012 93764	220µF 20% 35V
2465	2020 552 96326	220nF 10% 16V
2466	2020 552 96326	220nF 10% 16V
2509	4822 126 14247	1.5nF 50V 0603
2510	4822 126 14226	82pF 5% 50V 0603
2515	4822 124 12084	1µF 20% 50V
2516	2238 586 59812	100nF 20-80% 50V 0603
2518	2238 586 59812	100nF 20-80% 50V 0603
2519	4822 124 12084	1µF 20% 50V
2530	2238 586 59812	100nF 20-80% 50V 0603
2534	2020 012 93764	220µF 20% 35V
2535	2238 586 59812	100nF 20-80% 50V 0603
2540	5322 126 11583	10nF 10% 50V 0603
2555	2238 586 59812	100nF 20-80% 50V 0603
2559	2238 586 59812	100nF 20-80% 50V 0603
2560	2020 012 93764	220µF 20% 35V
2565	2020 552 96326	220nF 10% 16V
2566	2020 552 96326	220nF 10% 16V
2609	4822 126 14247	1.5nF 50V 0603
2610	4822 126 14226	82pF 5% 50V 0603
2615	4822 124 12084	1µF 20% 50V
2616	2238 586 59812	100nF 20-80% 50V 0603
2618	2238 586 59812	100nF 20-80% 50V 0603
2619	4822 124 12084	1µF 20% 50V
2630	2238 586 59812	100nF 20-80% 50V 0603
2634	2020 012 93764	220µF 20% 35V
2635	2238 586 59812	100nF 20-80% 50V 0603
2640	5322 126 11583	10nF 10% 50V 0603
2655	2238 586 59812	100nF 20-80% 50V 0603
2659	2238 586 59812	100nF 20-80% 50V 0603
2660	2020 012 93764	220µF 20% 35V
2665	2020 552 96326	220nF 10% 16V
2666	2020 552 96326	220nF 10% 16V
2730	2020 012 93764	220µF 20% 35V
2732	2020 012 93764	220µF 20% 35V
2734	4822 124 12084	1µF 20% 50V
2740	2020 012 93764	220µF 20% 35V
2742	2020 012 93764	220µF 20% 35V
2744	4822 124 12084	1µF 20% 50V
2752	4822 124 23002	10µF 20% 16V
2753	4822 124 23002	10µF 20% 16V
2759	5322 126 11578	1nF 10% 50V 0603
2760	5322 124 41945	22µF 20% 35V
2770	5322 126 11578	1nF 10% 50V 0603
2771	5322 126 11578	1nF 10% 50V 0603
2780	5322 126 11578	1nF 10% 50V 0603
2781	5322 126 11578	1nF 10% 50V 0603
2799	5322 126 11583	10nF 10% 50V 0603

-WW-

3201	4822 051 30221	220Ω 5% 0.062W
3202	4822 051 30102	1kΩ 5% 0.062W
3203	4822 051 30272	2.7kΩ 5% 0.062W
3205	4822 051 30221	220Ω 5% 0.062W
3206	4822 051 30102	1kΩ 5% 0.062W
3207	4822 051 30272	2.7kΩ 5% 0.062W
3210	4822 051 30333	33kΩ 5% 0.062W
3211	4822 117 13632	100kΩ 1% 0.62W 0603
3215	4822 051 30221	220Ω 5% 0.062W
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30272	2.7kΩ 5% 0.062W
3220	4822 051 30221	220Ω 5% 0.062W
3221	4822 051 30102	1kΩ 5% 0.062W
3222	4822 051 30272	2.7kΩ 5% 0.062W
3230	4822 051 30101	100Ω 5% 0.062W
3231	4822 051 30222	2.2kΩ 5% 0.062W
3232	4822 051 30152	1.5kΩ 5% 0.062W
3233	4822 051 30222	2.2kΩ 5% 0.062W
3234	4822 051 30561	560Ω 5% 0.062W
3240	4822 051 30101	100Ω 5% 0.062W
3241	4822 051 30222	2.2kΩ 5% 0.062W
3242	4822 051 30152	1.5kΩ 5% 0.062W
3243	4822 051 30222	2.2kΩ 5% 0.062W
3244	4822 051 30561	560Ω 5% 0.062W
3255	4822 117 11817	1.2kΩ 1% 0.062W
3256	4822 051 30332	3.3kΩ 5% 0.062W
3257	4822 051 30471	470Ω 5% 0.062W
3259	4822 117 12917	1Ω 5% 0.062W 0603
3270	4822 117 11817	1.2kΩ 1% 0.062W
3271	4822 051 30332	3.3kΩ 5% 0.062W
3272	4822 051 30471	470Ω 5% 0.062W
3274	4822 117 12917	1Ω 5% 0.062W 0603
3301	4822 051 30102	1kΩ 5% 0.062W
3302	4822 051 30472	4.7kΩ 5% 0.062W
3303	4822 051 30102	1kΩ 5% 0.062W
3304	4822 051 30472	4.7kΩ 5% 0.062W
3306	4822 117 12902	8.2kΩ 1% 0.063W 0603
3307	4822 117 13632	100kΩ 1% 0.62W 0603
3308	4822 117 13632	100kΩ 1% 0.62W 0603
3309	4822 051 30181	180Ω 5% 0.062W
3310	4822 117 12864	82kΩ 5% 0.6W
3311	4822 117 12917	1Ω 5% 0.062W 0603
3315	5322 117 11726	10Ω 5%
3318	5322 117 11726	10Ω 5%
3325	4822 117 11449	2.2kΩ 5% 0.1W 0805
3327	4822 117 11449	2.2kΩ 5% 0.1W 0805
3328	4822 051 30102	1kΩ 5% 0.062W
3330	5322 117 11726	10Ω 5%
3336	4822 051 30475	4.7MΩ 5% 0.062W 0603
3337	5322 117 11726	10Ω 5%
3340	4822 051 30103	10kΩ 5% 0.062W
3355	5322 117 11726	10Ω 5%
3361	4822 051 30475	4.7MΩ 5% 0.062W 0603
3362	5322 117 11726	10Ω 5%
3401	4822 051 30102	1kΩ 5% 0.062W
3402	4822 051 30472	4.7kΩ 5% 0.062W
3403	4822 051 30102	1kΩ 5% 0.062W
3404	4822 051 30472	4.7kΩ 5% 0.062W
3406	4822 117 12902	8.2kΩ 1% 0.063W 0603
3407	4822 117 13632	100kΩ 1% 0.62W 0603
3408	4822 117 13632	100kΩ 1% 0.62W 0603
3409	4822 051 30181	180Ω 5% 0.062W
3410	4822 117 12864	82kΩ 5% 0.6W
3411	4822 051 30153	15kΩ 5% 0.062W
3415	5322 117 11726	10Ω 5%
3418	5322 117 11726	10Ω 5%
3425	4822 117 11449	2.2kΩ 5% 0.1W 0805
3427	4822 117 11449	2.2kΩ 5% 0.1W 0805
3428	4822 051 30102	1kΩ 5% 0.062W
3430	5322 117 11726	10Ω 5%
3436	4822 051 30475	4.7MΩ 5% 0.062W 0603
3437	5322 117 11726	10Ω 5%
3440	4822 051 30103	10kΩ 5% 0.062W
3455	5322 117 11726	10Ω 5%
3461	4822 051 30475	4.7MΩ 5% 0.062W 0603
3462	5322 117 11726	10Ω 5%
3501	4822 051 30102	1kΩ 5% 0.062W
3502	4822 051 30472	4.7kΩ 5% 0.062W
3503	4822 051 30102	1kΩ 5% 0.062W
3504	4822 051 30472	4.7kΩ 5% 0.062W
3506	4822 117 12902	8.2kΩ 1% 0.063W 0603
3507	4822 117 13632	100kΩ 1% 0.62W 0603
3508	4822 117 13632	100kΩ 1% 0.62W 0603
3509	4822 051 30181	180Ω 5% 0.062W
3510	4822 117 12864	82kΩ 5% 0.6W
3511	4822 051 30682	6.8kΩ 5% 0.062W
3515	5322 117 11726	10Ω 5%
3518	5322 117 11726	10Ω 5%
3525	4822 117 11449	2.2kΩ 5% 0.1W 0805
3527	4822 117 11449	2.2kΩ 5% 0.1W 0805
3528	4822 051 30102	1kΩ 5% 0.062W
3530	5322 117 11726	10Ω 5%
3536	4822 051 30475	4.7MΩ 5% 0.062W 0603
3537	5322 117 11726	10Ω 5%
3540	4822 051 30103	10kΩ 5% 0.062W
3555	5322 117 11726	10Ω 5%
3561	4822 051 30475	4.7MΩ 5% 0.062W 0603
3562	5322 117 11726	10Ω 5%
3601	4822 051 30102	1kΩ 5% 0.062W
3602	4822 051 30472	4.7kΩ 5% 0.062W
3603	4822 051 30102	1kΩ 5% 0.062W
3604	4822 051 30472	4.7kΩ 5% 0.062W
3606	4822 117 12902	8.2kΩ 1% 0.063W 0603
3607	4822 117 13632	100kΩ 1% 0.62W 0603
3608	4822 117 13632	100kΩ 1% 0.62W 0603
3609	4822 051 30181	180Ω 5% 0.062W
3610	4822 117 12864	82kΩ 5% 0.6W
3611	4822 051 30223	22kΩ 5% 0.062W
3615	5322 117 11726	10Ω 5%
3618	5322 117 11726	10Ω 5%
3625	4822 117 11449	2.2kΩ 5% 0.1W 0805
3627	4822 117 11449	2.2kΩ 5% 0.1W 0805
3628	4822 051 30102	1kΩ 5% 0.062W
3630	5322 117 11726	10Ω 5%
3636	4822 051 30475	4.7MΩ 5% 0.062W 0603
3637	5322 117 11726	10Ω 5%
3640	4822 051 30103	10kΩ 5% 0.062W
3655	5322 117 11726	10Ω 5%
3661	4822 051 30475	4.7MΩ 5% 0.062W 0603
3662	5322 117 11726	10Ω 5%
3732	4822 051 30272	2.7kΩ 5% 0.062W
3733	4822 051 30102	1kΩ 5% 0.062W
3742	4822 051 30272	2.7kΩ 5% 0.062W
3743	4822 051 30102	1kΩ 5% 0.062W
3749	4822 051 30103	10kΩ 5% 0.062W
3750	4822 051 30471	470Ω 5% 0.062W
3751	4822 117 12925	47kΩ 1% 0.063W 0603

3752	4822 117 12925	47kΩ 1% 0.063W 0603
3754	4822 051 30102	1kΩ 5% 0.062W
3755	4822 117 13632	100kΩ 1% 0.62W 0603
3760	4822 051 30471	470Ω 5% 0.062W
3765	4822 117 13632	100kΩ 1% 0.62W 0603
3770	4822 117 13632	100kΩ 1% 0.62W 0603
3771	4822 117 13632	100kΩ 1% 0.62W 0603
3780	4822 117 13632	100kΩ 1% 0.62W 0603
3781	4822 117 13632	100kΩ 1% 0.62W 0603

5335	4822 157 11717	Filt. BLM31P500SPT
5360	4822 157 11717	Filt. BLM31P500SPT
5365	2422 536 00338	33µH 10% SMD 10mm
5435	4822 157 11717	Filt. BLM31P500SPT
5460	4822 157 11717	Filt. BLM31P500SPT
5465	2422 536 00338	33µH 10% SMD 10mm
5535	4822 157 11717	Filt. BLM31P500SPT
5560	4822 157 11717	Filt. BLM31P500SPT
5565	2422 536 00338	33µH 10% SMD 10mm
5635	4822 157 11717	Filt. BLM31P500SPT
5660	4822 157 11717	Filt. BLM31P500SPT
5665	2422 536 00338	33µH 10% SMD 10mm
5714	4822 157 11717	Filt. BLM31P500SPT
5719	4822 157 11717	Filt. BLM31P500SPT
5725	4822 157 11717	Filt. BLM31P500SPT
5753	2422 549 43769	Bead 30Ω at 100MHz

6328	4822 130 11397	BAS316
6334	4822 130 11148	UDZ4.7B
6335	4822 130 11148	UDZ4.7B
6355	4822 130 11148	UDZ4.7B
6356	4822 130 11148	UDZ4.7B
6359	4822 130 11148	UDZ4.7B
6360	4822 130 11148	UDZ4.7B
6428	4822 130 11397	BAS316
6434	4822 130 11148	UDZ4.7B
6435	4822 130 11148	UDZ4.7B
6455	4822 130 11148	UDZ4.7B
6456	4822 130 11148	UDZ4.7B
6459	4822 130 11148	UDZ4.7B
6460	4822 130 11148	UDZ4.7B
6528	4822 130 11397	BAS316
6534	4822 130 11148	UDZ4.7B
6535	4822 130 11148	UDZ4.7B
6555	4822 130 11148	UDZ4.7B
6556	4822 130 11148	UDZ4.7B
6559	4822 130 11148	UDZ4.7B
6560	4822 130 11148	UDZ4.7B
6628	4822 130 11397	BAS316
6634	4822 130 11148	UDZ4.7B
6635	4822 130 11148	UDZ4.7B
6655	4822 130 11148	UDZ4.7B
6656	4822 130 11148	UDZ4.7B
6659	4822 130 11148	UDZ4.7B
6660	4822 130 11148	UDZ4.7B
6732	4822 130 11551	UDZS10B
6742	4822 130 11551	UDZS10B
6750	4822 130 10328	BAV99W
6760	4822 130 10328	BAV99W

7211	3198 010 42320	BC857BW
7225	4822 209 30095	LM833D
7238	4822 209 30095	LM833D
7260	4822 209 30095	LM833D
7302	3198 010 42310	BC847BW
7303	3198 010 42310	BC847BW
7315	9338 028 20668	LM311D
7330	4822 130 42804	BC817-25
7340	3198 010 42310	BC847BW
7355	5322 130 60845	BC807-25
7365	9322 161 86668	IRF7343
7402	3198 010 42310	BC847BW
7403	3198 010 42310	BC847BW
7415	9338 028 20668	LM311D
7430	4822 130 42804	BC817-25
7440	3198 010 42310	BC847BW
7455	5322 130 60845	BC807-25
7465	9322 161 86668	IRF7343
7502	3198 010 42310	BC847BW
7503	3198 010 42310	BC847BW
7515	9338 028 20668	LM311D
7530	4822 130 42804	BC817-25
7540	3198 010 42310	BC847BW
7555	5322 130 60845	BC807-25
7565	9322 161 86668	IRF7343
7602	3198 010 42310	BC847BW
7603	3198 010 42310	BC847BW
7615	9338 028 20668	LM311D
7630	4822 130 42804	BC817-25
7640	3198 010 42310	BC847BW
7655	5322 130 60845	BC807-25
7665	9322 161 86668	IRF7343
7735	4822 130 60142	BC869
7736	3198 010 42310	BC847BW
7745	5322 130 61569	BC868
7746	3198 010 42320	BC857BW
7751	3198 010 42310	BC847BW
7753	3198 010 42320	BC857BW
7755	3198 010 42310	BC847BW
7761	3198 010 42320	BC857BW

Small Signal Panel [B]

Various

0020▲	3122 128 14621	Connector plate F37 EU
0072	3104 301 24451	Frame SSB A-side
0073	3104 301 24461	Cover SSB A-side
0074	3104 301 24221	Cover SSB Z-side
0075	3104 301 24201	Frame SSB Z-side
0079	3104 308 11161	Shielding cover
0080	3104 301 24471	Frame SSB Z-side
0103	3104 303 10871	EMC foam tuner
0166	3122 128 14661	Connector plate FTY37
0305	3104 304 23841	Xtal grommet
0308	3104 304 23841	Xtal grommet
1001	2422 543 89022	Xtal 6MHz 20pF CX5F
1061▲	3122 358 76342	Mains inlet unit
1305	2422 543 01184	Xtal 4.433619MHz 20pF
1308	2422 543 01183	Xtal 3.579545MHz 16pF
1403	2422 086 11092	Fuse F0.5A 50V 1206
1404	2422 127 00543	Switch 1p 2pos
1407	2422 549 44324	Filt. TPWCC04BS
1408	2422 549 44372	SAW 38.9MHz K3953L
1409	2422 549 44369	SAW 38.9MHz K9656L
1702	2422 540 98456	Resonator 12MHz
1A00	2422 543 89019	Xtal 18.432MHz 12pF
1D01	2422 025 16984	Connector 15p f
1E02	2422 025 17274	Connector 10p m
1E04	2422 025 17103	Connector 3p m
1I01	4822 267 10771	Socket 2 x SCART
1I04	4822 267 60385	Socket 1 x SCART
1I05	2422 026 05213	Socket 3p BkWhRd
1I07	2422 026 05501	Socket CINCH 6p f
1I08	4822 267 31014	Socket headphone
1I19	4822 267 10748	Connector 3p m
1T01	3139 147 19341	Tuner UV1318S/A I-3
1Y01	2422 025 17706	Connector 20p m
1Y45	2422 025 10768	Connector 3p m
1Y81	2422 025 10772	Connector 12p m
1Y82	4822 267 10636	Connector 13P
1Y88	4822 265 11352	Connector 8p
8303▲	3104 311 03611	Cable 12p/280/12p
8305▲	3104 311 06201	Cable 8p/480/8p
8307▲	3104 311 06701	Cable 10P/480/10P
8308▲	3104 311 06521	Cable 13P/340/13P
8309▲	3104 311 00351	Cable 3p/400/3p kr
8311▲	8204 000 76372	Cable TW.p 13/280/DF19

2000	4822 124 12095	100µF 20% 16V
2001	4822 124 12095	100µF 20% 16V
2002	4822 126 11669	27pF 5% 50V 0603
2003	4822 126 13879	220nF 20% 16V
2004	4822 126 13879	220nF 20% 16V
2005	2238 586 59812	100nF 20-80% 50V 0603
2006	2238 586 59812	100nF 20-80% 50V 0603
2007	2238 586 59812	100nF 20-80% 50V 0603
2008	2238 586 59812	100nF 20-80% 50V 0603
2010	4822 126 11785	47pF 5% 50V 0603
2011	4822 126 11785	47pF 5% 50V 0603
2012	4822 126 11785	47pF 5% 50V 0603
2013	2020 021 91557	100µF 20% 16V
2016	4822 124 12095	100µF 20% 16V
2017	2238 586 59812	100nF 20-80% 50V 0603
2018	2222 867 15339	33pF 5% 50V 0603
2019	2238 586 59812	100nF 20-80% 50V 0603
2020	4822 126 13883	220pF 5% 50V
2022	2238 586 59812	100nF 20-80% 50V 0603
2023	2238 586 59812	100nF 20-80% 50V 0603
2024	2238 586 59812	100nF 20-80% 50V 0603
2025	2238 586 59812	100nF 20-80% 50V 0603
2026	2238 586 59812	100nF 20-80% 50V 0603
2027	2238 586 59812	100nF 20-80% 50V 0603
2028	2238 586 59812	100nF 20-80% 50V 0603
2029	2238 586 59812	100nF 20-80% 50V 0603
2031	2238 586 59812	100nF 20-80% 50V 0603
2033	4822 126 14226	82pF 5% 50V 0603
2034	4822 126 14226	82pF 5% 50V 0603
2035	4822 126 14226	82pF 5% 50V 0603
2036	4822 126 14226	82pF 5% 50V 0603
2037	4822 126 14226	82pF 5% 50V 0603
2038	2238 586 59812	100nF 20-80% 50V 0603
2039	2238 586 59812	100nF 20-80% 50V 0603
2040	2238 586 59812	100nF 20-80% 50V 0603
2063	3198 017 34730	47nF 16V 0603
2067	2238 586 59812	100nF 20-80% 50V 0603
2073	2238 586 59812	100nF 20-80% 50V 0603
2074	2238 586 59812	100nF 20-80% 50V 0603
2302	2238 586 59812	100nF 20-80% 50V 0603
2305	2238 586 59812	100nF 20-80% 50V 0603
2316	2238 586 59812	100nF 20-80% 50V 0603
2322	2238 586 59812	100nF 20-80% 50V 0603
2340	2020 021 91557	100µF 20% 16V
2350	2238 586 59812	100nF 20-80% 50V 0603
2351	2238 586 59812	100nF 20-80% 50V 0603
2352	2238 586 59812	100nF 20-80% 50V 0603
2353	2238 586 59812	100nF 20-80% 50V 0603
2354	2238 586 59812	100nF 20-80% 50V 0603
2356	2238 586 59812	100nF 20-80% 50V 0603
2357	2238 586 59812	100nF 20-80% 50V 0603
2358	5322 126 11579	3.3nF 10% 63V
2359	4822 122 33752	15pF 5% 50V
2360	3198 016 31280	1.2pF 50V 0603
2361	3198 016 31280	1.2pF 50V 0603
2362	4822 126 11663	12pF 5% 50V 0603
2365	2238 586 59812	100nF 20-80% 50V 0603
2366	2238 586 59812	100nF 20-80% 50V 0603
2367	2238 586 59812	100nF 20-80% 50V 0603
2368	2238 586 59812	100nF 20-80% 50V 0603
2369	2238 586 59812	100nF 20-80% 50V 0603
2370	2238 586 59812	100nF 20-80% 50V 0603
2371	4822 126 13193	4.7nF 10% 63V
2372	2020 552 96448	1µF 10% 16V
2373	2238 586 59812	100nF 20-80% 50V 0603
2374	4822 126 14491	2.2µF -20+80% 10V 0805
2375	2238 916 15641	22nF 10% 25V 0603
2376	2238 586 59812	100nF 20-80% 50V 0603
2377	2020 021 91557	100µF 20% 16V
2378	2238 586 59812	100nF 20-80% 50V 0603
2384	2238 586 59812	100nF 20-80% 50V 0603
2385	2238 586 59812	100nF 20-80% 50V 0603
2390	2238 586 59812	100nF 20-80% 50V 0603
2391	2238 586 59812	100nF 20-80% 50V 0603
2394	4822 126 14491	2.2µF -20+80% 10V 0805
2403	2238 586 59812	100nF 20-80% 50V 0603
2404	2020 552 96448	1µF 10% 16V
2405	4822 126 13193	4.7nF 10% 63V
2406	4822 126 13883	220pF 5% 50V
2407	4822 126 14221	68PF 5% NP0 50V 0603
2408	3198 016 33380	3.3pF 50V 0603
2409	4822 126 14491	2.2µF -20+80% 10V 0805
2410	2020 021 91557	100µF 20% 16V
2411	2238 586 59812	100nF 20-80% 50V 0603
2412	4822 126 13193	4.7nF 10% 63V
2414	2020 021 91557	100µF 20% 16V
2415	2238 586 59812	100nF 20-80% 50V 0603
2417	3198 017 44740	470nF 10V 0603
2418	3198 016 35680	5.6pF 0.5pF 50V 0603
2422	2238 586 59812	100nF 20-80% 50V 0603
2424	2238 586 59812	100nF 20-80% 50V 0603
2425	2020 021 91557	100µF 20% 16V
2432	2238 586 59812	100nF 20-80% 50V 0603
2433	2238 586 59812	100nF 20-80% 50V 0603
2709	2238 586 59812	100nF 20-80% 50V 0603
2710	2238 586 59812	100nF 20-80% 50V 0603
2711	2238 586 59812	100nF 20-80% 50V 0603
2712	2238 586 59812	100nF 20-80% 50V 0603
2713	4822 122 33761	22pF 5% 50V
2714	4822 122 33761	22pF 5% 50V
2715	2238 586 59812	100nF 20-80% 50V 0603
2716	2238 586 59812	100nF 20-80% 50V 0603
2718	4822 122 33752	15pF 5% 50V
2719	4822 122 33752	15pF 5% 50V
2720	4822 122 33752	15pF 5% 50V
2721	2020 552 94427	100pF 5% 50v 0603
2722	2020 552 94427	100pF 5% 50v 0603
2723	3198 016 31020	1nF 10% 25V 0603
2724	2238 586 59812	100nF 20-80% 50V 0603
2728	2020 021 91554	10µF 20% 16V
2729	2238 586 59812	100nF 20-80% 50V 0603
2730	2020 021 91557	100µF 20% 16V
2731	2238 586 59812	100nF 20-80% 50V 0603
2732	2238 586 59812	100nF 20-80% 50V 0603
2733	2238 586 59812	100nF 20-80% 50V 0603
2734	2238 586 59812	100nF 20-80% 50V 0603
2735	2238 586 59812	100nF 20-80% 50V 0603
2740	2238 916 15641	22nF 10% 25V 0603
2741	2238 916 15641	22nF 10% 25V 0603
2742	2238 916 15641	22nF 10% 25V 0603

2743	2238 586 59812	100nF 20-80% 50V 0603
2744	2238 586 59812	100nF 20-80% 50V 0603
2745	2238 586 59812	100nF 20-80% 50V 0603
2746	2238 586 59812	100nF 20-80% 50V 0603
2747	2238 586 59812	100nF 20-80% 50V 0603
2748	2238 586 59812	100nF 20-80% 50V 0603
2749	2020 021 91554	10µF 20% 16V
2750	2238 586 59812	100nF 20-80% 50V 0603
2751	2238 586 59812	100nF 20-80% 50V 0603
2752	2238 586 59812	100nF 20-80% 50V 0603
2753	2238 586 59812	100nF 20-80% 50V 0603
2754	2238 586 59812	100nF 20-80% 50V 0603
2755	2238 586 59812	100nF 20-80% 50V 0603
2756	2238 586 59812	100nF 20-80% 50V 0603
2757	2238 916 15641	22nF 10% 25V 0603
2760	2238 586 59812	100nF 20-80% 50V 0603
2761	2238 586 59812	100nF 20-80% 50V 0603
2762	2238 586 59812	100nF 20-80% 50V 0603
2763	2238 586 59812	100nF 20-80% 50V 0603
2764	2238 586 59812	100nF 20-80% 50V 0603
2765	2238 586 59812	100nF 20-80% 50V 0603
2766	2238 586 59812	100nF 20-80% 50V 0603
2767	2238 586 59812	100nF 20-80% 50V 0603
2768	2238 586 59812	100nF 20-80% 50V 0603
2769	2238 586 59812	100nF 20-80% 50V 0603
2770	2020 021 91554	10µF 20% 16V
2771	2238 586 59812	100nF 20-80% 50V 0603
2772	2020 021 91557	100µF 20% 16V
2773	2238 586 59812	100nF 20-80% 50V 0603
2774	2238 586 59812	100nF 20-80% 50V 0603
2775	2238 586 59812	100nF 20-80% 50V 0603
2776	2238 586 59812	100nF 20-80% 50V 0603
2777	2238 586 59812	100nF 20-80% 50V 0603
2778	2238 586 59812	100nF 20-80% 50V 0603
2779	2238 586 59812	100nF 20-80% 50V 0603
2780	2238 586 59812	100nF 20-80% 50V 0603
2781	2238 586 59812	100nF 20-80% 50V 0603
2782	2238 586 59812	100nF 20-80% 50V 0603
2784	2238 586 59812	100nF 20-80% 50V 0603
2785	2238 586 59812	100nF 20-80% 50V 0603
2786	2238 586 59812	100nF 20-80% 50V 0603
2787	2238 586 59812	100nF 20-80% 50V 0603
2788	2238 586 59812	100nF 20-80% 50V 0603
2789	2238 586 59812	100nF 20-80% 50V 0603
2790	2238 586 59812	100nF 20-80% 50V 0603
2791	2238 586 59812	100nF 20-80% 50V 0603
2792	2020 021 91554	10µF 20% 16V
2793	2238 586 59812	100nF 20-80% 50V 0603
2794	2020 021 91554	10µF 20% 16V
2795	2238 586 59812	100nF 20-80% 50V 0603
2796	2238 586 59812	100nF 20-80% 50V 0603
2797	2238 586 59812	100nF 20-80% 50V 0603
2798	2238 586 59812	100nF 20-80% 50V 0603
2799	2238 586 59812	100nF 20-80% 50V 0603
2800	2238 586 59812	100nF 20-80% 50V 0603
2801	2238 586 59812	100nF 20-80% 50V 0603
2802	2238 586 59812	100nF 20-80% 50V 0603
2803	2238 586 59812	100nF 20-80% 50V 0603
2804	2238 586 59812	100nF 20-80% 50V 0603
2805	2238 586 59812	100nF 20-80% 50V 0603
2806	2238 586 59812	100nF 20-80% 50V 0603
2807	2238 586 59812	100nF 20-80% 50V 0603
2808	2020 021 91554	10µF 20% 16V
2809	2238 586 59812	100nF 20-80% 50V 0603
2810	2238 586 59812	100nF 20-80% 50V 0603
2811	2238 586 59812	100nF 20-80% 50V 0603
2812	2238 586 59812	100nF 20-80% 50V 0603
2813	2238 586 59812	100nF 20-80% 50V 0603
2817	2238 586 59812	100nF 20-80% 50V 0603
2819	2238 586 59812	100nF 20-80% 50V 0603
2820	2238 586 59812	100nF 20-80% 50V 0603
2821	2238 586 59812	100nF 20-80% 50V 0603
2822	2238 586 59812	100nF 20-80% 50V 0603
2823	5322 126 11578	1nF 10% 50V 0603
2824	5322 126 11578	1nF 10% 50V 0603
2825	2238 586 59812	100nF 20-80% 50V 0603
2826	2238 586 59812	100nF 20-80% 50V 0603
2829	2238 586 59812	100nF 20-80% 50V 0603
2831	4822 126 14221	68PF 5% NP0 50V 0603
2832	2238 586 59812	100nF 20-80% 50V 0603
2833	2238 586 59812	100nF 20-80% 50V 0603
2834	2238 586 59812	100nF 20-80% 50V 0603
2835	2238 586 59812	100nF 20-80% 50V 0603
2836	2238 586 59812	100nF 20-80% 50V 0603
2837	2238 586 59812	100nF 20-80% 50V 0603
2838	2238 586 59812	100nF 20-80% 50V 0603
2842	2238 586 59812	100nF 20-80% 50V 0603
2843	2238 586 59812	100nF 20-80% 50V 0603
2844	2238 586 59812	100nF 20-80% 50V 0603
2845	2238 586 59812	100nF 20-80% 50V 0603
2846	2238 586 59812	100nF 20-80% 50V 0603
2847	2238 586 59812	100nF 20-80% 50V 0603
2848	2238 586 59812	100nF 20-80% 50V 0603
2851	2238 586 59812	100nF 20-80% 50V 0603
2852	2238 586 59812	100nF 20-80% 50V 0603
2853	2238 586 59812	100nF 20-80% 50V 0603
2854	2238 586 59812	100nF 20-80% 50V 0603
2855	2238 586 59812	100nF 20-80% 50V 0603
2857	2238 586 59812	100nF 20-80% 50V 0603
2858	4822 124 12095	100µF 20% 16V
2859	2238 586 59812	100nF 20-80% 50V 0603
2860	2238 586 59812	100nF 20-80% 50V 0603
2861	2238 586 59812	100nF 20-80% 50V 0603
2862	2238 586 59812	100nF 20-80% 50V 0603
2863	2238 586 59812	100nF 20-80% 50V 0603
2864	2238 586 59812	100nF 20-80% 50V 0603
2865	2238 586 59812	100nF 20-80% 50V 0603
2866	2238 586 59812	100nF 20-80% 50V 0603
2867	2238 586 59812	100nF 20-80% 50V 0603
2870	2020 021 91554	10µF 20% 16V
2871	2020 021 91557	100µF 20% 16V
2872	2238 586 59812	100nF 20-80% 50V 0603
2874	2020 021 91554	10µF 20% 16V
2877	2020 021 91557	100µF 20% 16V
2880	2020 021 91554	10µF 20% 16V
2881	4822 126 11669	27pF 5% 50V 0603
2884	2238 586 59812	100nF 20-80% 50V 0603
2886	2238 586 59812	100nF 20-80% 50V 0603
2887	2238 586 59812	100nF 20-80% 50V 0603
2888	2238 586 59812	100nF 20-80% 50V 0603
2889	2238 586 59812	100nF 20-80% 50V 0603
2890	2238 586 59812	100nF 20-80% 50V 0603
2891	2238 586 59812	100nF 20-80% 50V 0603
2892	2238 586 59812	100nF 20-80% 50V 0603
2893	2238 586 59812	100nF 20-80% 50V 0603
2894	2238 586 59812	100nF 20-80% 50V 0603
2895	2238 586 59812	100nF 20-80% 50V 0603
2896	2238 586 59812	100nF 20-80% 50V 0603
2897	2238 586 59812	100nF 20-80% 50V 0603
2898	2238 586 59812	100nF 20-80% 50V 0603
2899	2238 586 59812	100nF 20-80% 50V 0603
2A00	2020 552 96618	1nF 10% 50V 0402
2A01	2020 021 91557	100µF 20% 16V
2A02	2020 552 96448	1µF 10% 16V
2A03	2020 021 91557	100µF 20% 16V
2A04	2020 552 96448	1µF 10% 16V
2A05	2020 021 91557	100µF 20% 16V
2A06	2020 552 96618	1nF 10% 50V 0402
2A07	2020 021 91557	100µF 20% 16V
2A08	2020 552 96448	1µF 10% 16V
2A10	2238 586 59812	100nF 20-80% 50V 0603
2A11	2238 586 59812	100nF 20-80% 50V 0603
2A13	2020 552 96618	1nF 10% 50V 0402
2A14	2020 552 96618	1nF 10% 50V 0402
2A15	2020 021 91557	100µF 20% 16V
2A16	2238 586 59812	100nF 20-80% 50V 0603
2A17	2020 552 96618	1nF 10% 50V 0402
2A18	2020 021 91557	100µF 20% 16V
2A19	3198 017 41050	1µF 10V 0603
2A21	2238 586 59812	100nF 20-80% 50V 0603
2A22	2238 586 59812	100nF 20-80% 50V 0603
2A23	2238 586 59812	100nF 20-80% 50V 0603
2A26	2238 586 59812	100nF 20-80% 50V 0603
2A27	2020 552 96618	1nF 10% 50V 0402
2A29	2238 869 15101	100pF 5% 50V 0402
2A30	2238 869 15101	100pF 5% 50V 0402
2A31	2238 586 59812	100nF 20-80% 50V 0603
2A32	2238 869 15101	100pF 5% 50V 0402
2A33	2238 586 59812	100nF 20-80% 50V 0603
2A34	3198 035 71030	10nF 16V 0402
2A35	2020 552 96618	1nF 10% 50V 0402
2A36	2238 869 15101	100pF 5% 50V 0402
2A37	2238 869 15101	100pF 5% 50V 0402
2A38	3198 035 71030	10nF 16V 0402
2A40	2238 586 59812	100nF 20-80% 50V 0603
2A41	2020 021 91554	10µF 20% 16V
2A42	2020 021 91554	10µF 20% 16V
2A43	2020 021 91554	10µF 20% 16V
2A44	2238 586 59812	100nF 20-80% 50V 0603
2A46	2020 552 96448	1µF 10% 16V
2A47	2020 552 96618	1nF 10% 50V 0402
2A48	2020 552 96618	1nF 10% 50V 0402
2A49	2020 552 96448	1µF 10% 16V
2A50	2020 552 96618	1nF 10% 50V 0402
2A51	2020 552 96618	1nF 10% 50V 0402
2A52	2020 552 96618	1nF 10% 50V 0402
2A54	2020 552 96618	1nF 10% 50V 0402
2A57	2020 552 96618	1nF 10% 50V 0402
2A60	2020 552 96618	1nF 10% 50V 0402
2A65	2020 552 96618	1nF 10% 50V 0402
2A67	2020 552 96448	1µF 10% 16V
2A68	2020 552 96618	1nF 10% 50V 0402
2A71	2020 552 96448	1µF 10% 16V
2A73	2020 552 96618	1nF 10% 50V 0402
2A77	2020 552 96618	1nF 10% 50V 0402
2A79	2238 586 59812	100nF 20-80% 50V 0603
2A82	3198 017 34730	47nF 16V 0603
2A91	2020 552 96448	1µF 10% 16V
2A92	2020 552 96448	1µF 10% 16V
2A95	4822 126 13883	220pF 5% 50V
2A99	2238 869 15101	100pF 5% 50V 0402
2AA0	2238 869 15101	100pF 5% 50V 0402
2AA1	2238 869 15101	100pF 5% 50V 0402
2AA5	2238 869 15101	100pF 5% 50V 0402
2AA6	2020 552 96618	1nF 10% 50V 0402
2AA7	2020 552 96618	1nF 10% 50V 0402
2AA8	2020 552 96618	1nF 10% 50V 0402
2AA9	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB0	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB2	2020 552 96618	1nF 10% 50V 0402
2AB3	2020 552 96448	1µF 10% 16V
2AB4	2020 552 96448	1µF 10% 16V
2AB5	2020 021 91554	10µF 20% 16V
2AB8	2020 552 96448	1µF 10% 16V
2C00	2238 586 59812	100nF 20-80% 50V 0603
2C01	2238 586 59812	100nF 20-80% 50V 0603
2C02	2238 586 59812	100nF 20-80% 50V 0603
2D03	2020 552 96618	1nF 10% 50V 0402
2D04	2020 552 96618	1nF 10% 50V 0402
2D09	2238 586 59812	100nF 20-80% 50V 0603
2D10	2238 586 59812	100nF 20-80% 50V 0603
2D11	2238 586 59812	100nF 20-80% 50V 0603
2D12	2238 586 59812	100nF 20-80% 50V 0603
2D16	2238 586 59812	100nF 20-80% 50V 0603
2D17	2238 586 59812	100nF 20-80% 50V 0603
2D22	2238 586 59812	100nF 20-80% 50V 0603
2D50	4822 126 13879	220nF 20% 16V
2D51	2238 586 59812	100nF 20-80% 50V 0603
2D52	2238 586 59812	100nF 20-80% 50V 0603
2D53	2022 552 05616	4.7µF 5% 6.3V
2D54	2022 552 05616	4.7µF 5% 6.3V
2D55	2022 552 05616	4.7µF 5% 6.3V
2D57	2238 586 59812	100nF 20-80% 50V 0603
2D58	2022 552 05616	4.7µF 5% 6.3V
2D59	2022 552 05616	4.7µF 5% 6.3V
2D60	2022 552 05616	4.7µF 5% 6.3V
2D61	2022 552 05616	4.7µF 5% 6.3V
2D62	4822 126 13879	220nF 20% 16V
2D63	2022 552 05616	4.7µF 5% 6.3V
2D64	2022 552 05616	4.7µF 5% 6.3V
2D65	3198 032 47170	47µF 20% 16V
2D66	2238 586 59812	100nF 20-80% 50V 0603
2D67	2238 586 59812	100nF 20-80% 50V 0603
2D68	2238 586 59812	100nF 20-80% 50V 0603
2D69	3198 016 31020	1nF 10% 25V 0603
2D70	2238 586 59812	100nF 20-80% 50V 0603
2D71	2238 586 59812	100nF 20-80% 50V 0603
2D72	4822 126 11785	47pF 5% 50V 0603
2D73	4822 126 11785	47pF 5% 50V 0603
2D74	3198 032 47170	47µF 20% 16V
2D75	2238 586 59812	100nF 20-80% 50V 0603
2D76	2022 552 05616	4.7µF 5% 6.3V
2D77	2238 586 59812	100nF 20-80% 50V 0603
2D78	2238 586 59812	100nF 20-80% 50V 0603
2E02	4822 124 23237	22µF 20% 6.3V
2E04	3198 035 04710	470pF 50V 0402
2E05	4822 124 23237	22µF 20% 6.3V
2E09	4822 124 23237	22µF 20% 6.3V
2E10	2238 586 59812	100nF 20-80% 50V 0603
2E11	4822 124 23237	22µF 20% 6.3V
2E12	2022 552 05616	4.7µF 5% 6.3V
2E14	2238 586 59812	100nF 20-80% 50V 0603
2E15	2238 586 59812	100nF 20-80% 50V 0603
2E17	2022 552 05616	4.7µF 5% 6.3V
2E18	2022 552 05616	4.7µF 5% 6.3V
2E19	2238 586 59812	100nF 20-80% 50V 0603
2E20	2238 586 59812	100nF 20-80% 50V 0603
2E21	2238 586 59812	100nF 20-80% 50V 0603
2E22	2020 552 96448	1µF 10% 16V
2E23	2238 586 59812	100nF 20-80% 50V 0603
2E24	2238 586 59812	100nF 20-80% 50V 0603
2E25	2238 586 59812	100nF 20-80% 50V 0603
2E26	2022 552 05616	4.7µF 5% 6.3V
2E28	2238 586 59812	100nF 20-80% 50V 0603
2E30	2022 552 05616	4.7µF 5% 6.3V
2E32	4822 124 81286	47µF 20% 16V
2E34	4822 124 11946	22µF 20% 16V
2E35	2238 586 59812	100nF 20-80% 50V 0603
2E37	4822 124 23237	22µF 20% 6.3V
2E39	2022 552 05616	4.7µF 5% 6.3V
2E50	4822 124 23237	22µF 20% 6.3V
2E51	2020 552 96448	1µF 10% 16V
2E52	2238 586 59812	100nF 20-80% 50V 0603
2E54	2238 586 59812	100nF 20-80% 50V 0603
2E55	2022 552 05616	4.7µF 5% 6.3V
2E56	2238 586 59812	100nF 20-80% 50V 0603
2E58	2238 586 59812	100nF 20-80% 50V 0603
2E59	2238 586 59812	100nF 20-80% 50V 0603
2E61	2238 586 59812	100nF 20-80% 50V 0603
2E62	2238 586 59812	100nF 20-80% 50V 0603
2E63	2238 586 59812	100nF 20-80% 50V 0603
2E64	2238 586 59812	100nF 20-80% 50V 0603

2E66	2238 586 59812	100nF 20-80% 50V 0603
2E68	2022 552 05616	4.7µF 5% 6.3V
2E69	2238 586 59812	100nF 20-80% 50V 0603
2E70	2238 586 59812	100nF 20-80% 50V 0603
2E71	2238 586 59812	100nF 20-80% 50V 0603
2E72	2238 586 59812	100nF 20-80% 50V 0603
2E73	2238 586 59812	100nF 20-80% 50V 0603
2E74	2238 586 59812	100nF 20-80% 50V 0603
2E75	2238 586 59812	100nF 20-80% 50V 0603
2E76	2238 586 59812	100nF 20-80% 50V 0603
2E78	2238 586 59812	100nF 20-80% 50V 0603
2E79	2238 586 59812	100nF 20-80% 50V 0603
2E80	2238 586 59812	100nF 20-80% 50V 0603
2E83	2238 586 59812	100nF 20-80% 50V 0603
2E84	2238 586 59812	100nF 20-80% 50V 0603
2E86	2238 586 59812	100nF 20-80% 50V 0603
2E87	4822 124 12095	100µF 20% 16V
2I00	2238 586 59812	100nF 20-80% 50V 0603
2I07	4822 051 30008	Jumper 0603
2I09	2020 552 94427	100pF 5% 50v 0603
2I10	2020 552 94427	100pF 5% 50v 0603
2I11	2020 552 94427	100pF 5% 50v 0603
2I12	4822 126 14241	330pF 50V 0603
2I16	2020 552 94427	100pF 5% 50v 0603
2I17	2020 552 94427	100pF 5% 50v 0603
2I18	2020 552 94427	100pF 5% 50v 0603
2I19	2020 552 94427	100pF 5% 50v 0603
2I20	4822 126 14241	330pF 50V 0603
2I21	2020 552 94427	100pF 5% 50v 0603
2I22	2020 552 94427	100pF 5% 50v 0603
2I23	2020 552 94427	100pF 5% 50v 0603
2I24	2020 552 94427	100pF 5% 50v 0603
2I25	4822 126 14241	330pF 50V 0603
2I26	2020 552 94427	100pF 5% 50v 0603
2I27	2020 552 94427	100pF 5% 50v 0603
2I36	2020 552 94427	100pF 5% 50v 0603
2I39	3198 024 44730	47nF 50V 0603
2I46	3198 016 31020	1nF 10% 25V 0603
2I47	3198 016 31020	1nF 10% 25V 0603
2I48	2238 587 15624	1.2nF 10% 50V 0402
2I51	2238 586 59812	100nF 20-80% 50V 0603
2I52	2020 552 94427	100pF 5% 50v 0603
2I54	2238 869 15101	100pF 5% 50V 0402
2I57	2020 552 94427	100pF 5% 50v 0603
2I58	2020 552 94427	100pF 5% 50v 0603
2I59	2238 586 59812	100nF 20-80% 50V 0603
2I60	2238 587 15624	1.2nF 10% 50V 0402
2I62	2238 869 15101	100pF 5% 50V 0402
2I64	2238 869 15101	100pF 5% 50V 0402
2I65	2238 869 15101	100pF 5% 50V 0402
2I66	2238 869 15101	100pF 5% 50V 0402
2I67	2238 869 15101	100pF 5% 50V 0402
2I69	2238 869 15101	100pF 5% 50V 0402
2I70	2238 869 15101	100pF 5% 50V 0402
2I71	2020 552 96448	1µF 10% 16V
2I72	2020 552 96448	1µF 10% 16V
2I73	2020 552 96448	1µF 10% 16V
2I74	2020 552 96448	1µF 10% 16V
2I75	2020 552 96448	1µF 10% 16V
2I76	2020 552 96448	1µF 10% 16V
2I77	2020 552 96448	1µF 10% 16V
2I78	2020 552 96448	1µF 10% 16V
2I79	2020 021 91886	22µF 20% 16V
2I80	2020 552 96448	1µF 10% 16V
2I81	2020 552 96448	1µF 10% 16V
2I82	2020 552 96448	1µF 10% 16V
2I83	2020 552 96448	1µF 10% 16V
2I84	2020 552 96448	1µF 10% 16V
2I85	2020 552 96448	1µF 10% 16V
2I98	2238 869 15101	100pF 5% 50V 0402
2I99	2020 552 96448	1µF 10% 16V
2IA0	2020 552 96448	1µF 10% 16V
2IA1	2020 552 96448	1µF 10% 16V
2IA2	2020 552 96448	1µF 10% 16V
2IA4	2020 552 96448	1µF 10% 16V
2IA5	2020 021 91557	100µF 20% 16V
2IA7	2020 552 96448	1µF 10% 16V
2IB3	2238 586 59812	100nF 20-80% 50V 0603
2IB7	2238 586 59812	100nF 20-80% 50V 0603
2IB8	2020 552 96628	10nF 10% 16V 0402
2IB9	2238 586 59812	100nF 20-80% 50V 0603
2IC0	4822 124 23002	10µF 20% 16V
2IC1	4822 124 23002	10µF 20% 16V
2IC3	2238 586 59812	100nF 20-80% 50V 0603
2IC6	5322 126 11583	10nF 10% 50V 0603
2IC7	2020 552 94427	100pF 5% 50v 0603
2IC9	4822 126 13881	470pF 5% 50V
2IG1	2238 586 59812	100nF 20-80% 50V 0603
2IH2	2238 586 59812	100nF 20-80% 50V 0603
2IH3	3198 016 31020	1nF 10% 25V 0603
2IH5	4822 126 14241	330pF 50V 0603
2IH6	4822 126 14241	330pF 50V 0603
2IH7	5322 126 11583	10nF 10% 50V 0603
2IJ4	2238 586 59812	100nF 20-80% 50V 0603
2IJ5	4822 126 14585	100nF 10% 50V
2L01	3198 035 71040	100nF 10% 16V 0402
2L02	3198 035 71040	100nF 10% 16V 0402
2L03	3198 035 71040	100nF 10% 16V 0402
2L04	3198 035 71040	100nF 10% 16V 0402
2L05	3198 035 71040	100nF 10% 16V 0402
2L06	3198 035 71040	100nF 10% 16V 0402
2L07	3198 035 71040	100nF 10% 16V 0402
2L08	3198 035 71040	100nF 10% 16V 0402
2L09	3198 035 71040	100nF 10% 16V 0402
2L10	3198 035 71040	100nF 10% 16V 0402
2L11	2238 586 59812	100nF 20-80% 50V 0603
2L12	3198 035 71040	100nF 10% 16V 0402
2L13	3198 035 71040	100nF 10% 16V 0402
2L14	3198 035 71040	100nF 10% 16V 0402
2L15	3198 035 71040	100nF 10% 16V 0402
2L16	3198 035 71040	100nF 10% 16V 0402
2L17	3198 035 71040	100nF 10% 16V 0402
2L18	2020 552 96305	4.7µF 20-80% 10V
2L19	4822 124 23002	10µF 20% 16V
2L20	3198 035 71040	100nF 10% 16V 0402
2L21	3198 035 71040	100nF 10% 16V 0402
2L22	5322 126 11583	10nF 10% 50V 0603
2L23	5322 126 11583	10nF 10% 50V 0603
2L24	5322 126 11583	10nF 10% 50V 0603
2L25	2238 586 59812	100nF 20-80% 50V 0603
2L26	4822 126 14549	33nF 16V 0603
2L27	4822 126 13193	4.7nF 10% 63V
2L28	4822 126 14226	82pF 5% 50V 0603
2L29	4822 122 33761	22pF 5% 50V
2L30	4822 126 14226	82pF 5% 50V 0603
2L31	3198 017 34730	47nF 16V 0603
2L32	5322 126 11579	3.3nF 10% 63V
2L33	2238 586 59812	100nF 20-80% 50V 0603
2L34	2238 586 59812	100nF 20-80% 50V 0603
2L35	4822 126 13879	220nF 20% 16V
2L36	3198 016 31020	1nF 10% 25V 0603
2L37	3198 016 31020	1nF 10% 25V 0603
2L38	3198 016 31020	1nF 10% 25V 0603
2L39	2238 586 59812	100nF 20-80% 50V 0603
2L40	2020 552 96305	4.7µF 20-80% 10V
2L41	3198 016 31020	1nF 10% 25V 0603
2L42	3198 016 31020	1nF 10% 25V 0603
2L43	2238 586 59812	100nF 20-80% 50V 0603
2L44	2020 552 96305	4.7µF 20-80% 10V
2L45	3198 016 31020	1nF 10% 25V 0603
2L46	3198 016 31020	1nF 10% 25V 0603
2L47	2238 586 59812	100nF 20-80% 50V 0603
2L48	4822 122 33752	15pF 5% 50V
2L50	4822 122 33752	15pF 5% 50V
2L52	3198 017 34730	47nF 16V 0603
2L53	4822 124 81059	220µF 20% 4V
2L54	3198 017 34730	47nF 16V 0603
2L57	3198 017 34730	47nF 16V 0603
2L58	4822 124 81059	220µF 20% 4V
2L59	2020 552 96618	1nF 10% 50V 0402
2L60	4822 126 11785	47pF 5% 50V 0603
2L63	4822 126 11785	47pF 5% 50V 0603
2P80	4822 124 12095	100µF 20% 16V
2P81	2238 586 59812	100nF 20-80% 50V 0603
2S01	2238 586 59812	100nF 20-80% 50V 0603
2S02	2238 586 59812	100nF 20-80% 50V 0603
2S03	2238 586 59812	100nF 20-80% 50V 0603
2S04	2238 586 59812	100nF 20-80% 50V 0603
2S05	2238 586 59812	100nF 20-80% 50V 0603
2S06	2020 552 94427	100pF 5% 50v 0603
2S07	2020 552 94427	100pF 5% 50v 0603
2S08	2020 552 94427	100pF 5% 50v 0603
2S09	2020 552 94427	100pF 5% 50v 0603
2S11	2020 552 94427	100pF 5% 50v 0603
2S13	2020 552 94427	100pF 5% 50v 0603
2S14	2020 552 94427	100pF 5% 50v 0603
2S15	2020 552 94427	100pF 5% 50v 0603
2S16	2020 552 94427	100pF 5% 50v 0603
2S22	3198 017 44740	470nF 10V 0603
2S42	4822 051 30759	75Ω 5% 0.062W
2T01	2020 021 91887	470µF 20% 16V
2T04	3198 024 44730	47nF 50V 0603
2T05	2020 021 91887	470µF 20% 16V
2T06	5322 126 11583	10nF 10% 50V 0603
2T09	3198 017 34730	47nF 16V 0603
2T12	2238 586 59812	100nF 20-80% 50V 0603
2T13	5322 126 11583	10nF 10% 50V 0603
2T15	2020 552 96448	1µF 10% 16V
2U08	2020 021 91887	470µF 20% 16V
2U23	4822 124 12095	100µF 20% 16V
2U26	2238 586 59812	100nF 20-80% 50V 0603
2U29	2238 586 59812	100nF 20-80% 50V 0603
2U31	4822 124 12095	100µF 20% 16V
2U37	2020 552 96448	1µF 10% 16V
2V05	4822 122 33741	10pF 10% 50V
2V06	2238 586 59812	100nF 20-80% 50V 0603
2V07	2238 586 59812	100nF 20-80% 50V 0603
2V08	2238 586 59812	100nF 20-80% 50V 0603
2V09	2238 586 59812	100nF 20-80% 50V 0603
2V10	2238 586 59812	100nF 20-80% 50V 0603
2V11	2238 586 59812	100nF 20-80% 50V 0603
2V12	2238 586 59812	100nF 20-80% 50V 0603
2V13	2238 586 59812	100nF 20-80% 50V 0603
2Y00	2238 869 15101	100pF 5% 50V 0402
2Y01	2020 552 96618	1nF 10% 50V 0402

3000	4822 117 12925	47kΩ 1% 0.063W 0603
3001	4822 051 30472	4.7kΩ 5% 0.062W
3002	4822 051 30472	4.7kΩ 5% 0.062W
3003	4822 117 13525	24kΩ 1% 0.62W 0603
3005	4822 051 30103	10kΩ 5% 0.062W
3006	4822 051 30471	470Ω 5% 0.062W
3007	3198 031 14710	4 x 470Ω 5% 1206
3008	4822 117 13523	220Ω 5% 0.63W
3010	4822 051 30103	10kΩ 5% 0.062W
3011	4822 051 30103	10kΩ 5% 0.062W
3012	3198 031 11010	4 x 100Ω 5% 1206
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 051 30682	6.8kΩ 5% 0.062W
3015	4822 051 30474	470kΩ 5% 0.062W
3016	5322 117 13034	1.5kΩ 1% 0.063W 0603
3017	4822 051 30472	4.7kΩ 5% 0.062W
3018	4822 051 30103	10kΩ 5% 0.062W
3019	4822 051 30472	4.7kΩ 5% 0.062W
3020	4822 051 30103	10kΩ 5% 0.062W
3021	4822 051 30103	10kΩ 5% 0.062W
3022	4822 117 11817	1.2kΩ 1% 0.062W
3023	4822 051 30222	2.2kΩ 5% 0.062W
3024	4822 051 30273	27kΩ 5% 0.062W
3025	4822 051 30221	220Ω 5% 0.062W
3026	4822 051 30472	4.7kΩ 5% 0.062W
3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 051 30472	4.7kΩ 5% 0.062W
3029	3198 031 11010	4 x 100Ω 5% 1206
3030	4822 051 30472	4.7kΩ 5% 0.062W
3031	3198 031 11010	4 x 100Ω 5% 1206
3032	4822 051 30103	10kΩ 5% 0.062W
3033	4822 051 30103	10kΩ 5% 0.062W
3034	3198 031 11010	4 x 100Ω 5% 1206
3035	3198 031 11010	4 x 100Ω 5% 1206
3036	4822 051 30472	4.7kΩ 5% 0.062W
3039	4822 051 30181	180Ω 5% 0.062W
3046	3198 031 11010	4 x 100Ω 5% 1206
3047	4822 051 30008	Jumper 0603
3048	3198 031 11010	4 x 100Ω 5% 1206
3049	3198 031 11010	4 x 100Ω 5% 1206
3050	3198 031 11010	4 x 100Ω 5% 1206
3051	3198 031 11010	4 x 100Ω 5% 1206
3052	3198 031 11010	4 x 100Ω 5% 1206
3053	4822 051 30103	10kΩ 5% 0.062W
3054	3198 031 11010	4 x 100Ω 5% 1206
3055	3198 031 11010	4 x 100Ω 5% 1206
3056	3198 031 11010	4 x 100Ω 5% 1206
3057	3198 031 11010	4 x 100Ω 5% 1206
3059	2322 704 66201	620Ω 1% 0603
3061	3198 031 11010	4 x 100Ω 5% 1206
3062	4822 051 30103	10kΩ 5% 0.062W
3064	3198 031 11010	4 x 100Ω 5% 1206
3065	4822 051 30472	4.7kΩ 5% 0.062W
3066	4822 117 12925	47kΩ 1% 0.063W 0603
3067	4822 051 30474	470kΩ 5% 0.062W
3069	4822 051 30222	2.2kΩ 5% 0.062W
3072	3198 031 11010	4 x 100Ω 5% 1206
3073	3198 031 14710	4 x 470Ω 5% 1206
3074	3198 031 14710	4 x 470Ω 5% 1206
3076	3198 031 14710	4 x 470Ω 5% 1206
3077	4822 051 30103	10kΩ 5% 0.062W
3078	3198 031 14710	4 x 470Ω 5% 1206
3079	4822 051 30222	2.2kΩ 5% 0.062W
3080	4822 051 30472	4.7kΩ 5% 0.062W
3081	4822 051 30471	470Ω 5% 0.062W
3082	3198 031 11010	4 x 100Ω 5% 1206
3083	3198 031 11010	4 x 100Ω 5% 1206
3084	4822 051 30103	10kΩ 5% 0.062W
3085	3198 031 11010	4 x 100Ω 5% 1206
3086	3198 031 11010	4 x 100Ω 5% 1206
3087	4822 051 30101	100Ω 5% 0.062W
3088	4822 051 30222	2.2kΩ 5% 0.062W
3089	4822 051 30101	100Ω 5% 0.062W
3090	3198 031 14710	4 x 470Ω 5% 1206
3091	4822 051 30008	Jumper 0603
3092	4822 051 30222	2.2kΩ 5% 0.062W
3093	4822 051 30103	10kΩ 5% 0.062W
3097	4822 051 30471	470Ω 5% 0.062W
3099	3198 031 14710	4 x 470Ω 5% 1206
3100	4822 051 30221	220Ω 5% 0.062W
3101	4822 051 30221	220Ω 5% 0.062W
3102	3198 031 11010	4 x 100Ω 5% 1206
3301	4822 117 13632	100kΩ 1% 0.62W 0603

3303	4822 117 13632	100kΩ 1% 0.62W 0603
3304⚠	2322 750 63908	3.9Ω 5% 1206 fusible
3308	4822 051 20474	470kΩ 5% 0.1W
3368	4822 051 30471	470Ω 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30479	47Ω 5% 0.062W
3372	4822 051 30471	470Ω 5% 0.062W
3373	4822 051 30008	Jumper 0603
3374	4822 051 30008	Jumper 0603
3375	4822 051 30008	Jumper 0603
3376	4822 051 30101	100Ω 5% 0.062W
3377	4822 051 30101	100Ω 5% 0.062W
3378	4822 051 30153	15kΩ 5% 0.062W
3379	4822 051 30008	Jumper 0603
3380	4822 051 30101	100Ω 5% 0.062W
3381	4822 051 30008	Jumper 0603
3382	3198 031 05610	560Ω 5% 0.01W 0402
3385	4822 051 30471	470Ω 5% 0.062W
3393	4822 117 13632	100kΩ 1% 0.62W 0603
3400⚠	4822 117 11152	4.7Ω 5% 0.062W
3402⚠	2322 750 63908	3.9Ω 5% 1206 fusible
3403	4822 051 30101	100Ω 5% 0.062W
3404	4822 051 30561	560Ω 5% 0.062W
3405	4822 051 30102	1kΩ 5% 0.062W
3406	2322 702 60279	27Ω 5% 0.1W 0603
3408	4822 051 30101	100Ω 5% 0.062W
3411	3198 031 02720	2.7kΩ 5% 0.01W 0402
3412⚠	4822 117 11152	4.7Ω 5% 0.062W
3414	4822 051 30472	4.7kΩ 5% 0.062W
3415	4822 051 30222	2.2kΩ 5% 0.062W
3418	4822 051 30391	390Ω 5% 0.062W
3419	2120 108 91909	39Ω 5% 0603
3435	4822 051 30472	4.7kΩ 5% 0.062W
3436	4822 051 30181	180Ω 5% 0.062W
3437	4822 051 30471	470Ω 5% 0.062W
3439	4822 051 30391	390Ω 5% 0.062W
3441	4822 051 30562	5.6kΩ 5% 0.063W 0603
3445	4822 051 30121	120Ω 5% 0.062W
3463	4822 051 30472	4.7kΩ 5% 0.062W
3468	4822 117 13632	100kΩ 1% 0.62W 0603
3473	4822 051 30102	1kΩ 5% 0.062W
3474	4822 051 30109	10Ω 5% 0.062W
3475⚠	5322 117 11726	10Ω 5%
3476	4822 051 30561	560Ω 5% 0.062W
3700	4822 051 30472	4.7kΩ 5% 0.062W
3701	4822 051 30472	4.7kΩ 5% 0.062W
3702	4822 051 30472	4.7kΩ 5% 0.062W
3703	3198 031 01090	10Ω 5% 0.01W 0402
3704	3198 031 01090	10Ω 5% 0.01W 0402
3705	3198 031 01090	10Ω 5% 0.01W 0402
3706	3198 031 01090	10Ω 5% 0.01W 0402
3707	3198 031 01090	10Ω 5% 0.01W 0402
3708	3198 031 01090	10Ω 5% 0.01W 0402
3709	4822 051 30101	100Ω 5% 0.062W
3710	4822 051 30101	100Ω 5% 0.062W
3711	4822 117 12925	47kΩ 1% 0.063W 0603
3712	4822 117 12925	47kΩ 1% 0.063W 0603
3713	4822 051 30181	180Ω 5% 0.062W
3714	4822 051 30181	180Ω 5% 0.062W
3715	4822 051 30181	180Ω 5% 0.062W
3716	4822 117 13632	100kΩ 1% 0.62W 0603
3717	4822 117 13632	100kΩ 1% 0.62W 0603
3718	4822 117 13632	100kΩ 1% 0.62W 0603
3719	4822 051 30332	3.3kΩ 5% 0.062W
3720	4822 051 30103	10kΩ 5% 0.062W
3721	4822 117 13545	100Ω 1% 0402
3722	4822 051 30109	10Ω 5% 0.062W
3723	4822 051 30472	4.7kΩ 5% 0.062W
3725	4822 051 30332	3.3kΩ 5% 0.062W
3726	4822 117 11817	1.2kΩ 1% 0.062W
3727	4822 051 30151	150Ω 5% 0.062W
3728	4822 051 30151	150Ω 5% 0.062W
3729	4822 117 13545	100Ω 1% 0402
3730	3198 031 06810	680Ω 5% 0.01W 0402
3736	4822 051 30101	100Ω 5% 0.062W
3737	4822 051 30102	1kΩ 5% 0.062W
3738	4822 051 30102	1kΩ 5% 0.062W
3739	3198 031 01530	15kΩ 5% 0.01W 0402
3740	4822 051 30102	1kΩ 5% 0.062W
3741	4822 051 30223	22kΩ 5% 0.062W
3743	4822 051 30153	15kΩ 5% 0.062W
3744	4822 051 30222	2.2kΩ 5% 0.062W
3745	4822 051 30102	1kΩ 5% 0.062W
3746	5322 117 13042	3.9kΩ 1% 0.063W 0603
3747	4822 051 30154	150kΩ 5% 0.062W
3748	4822 117 12891	220kΩ 1% 0.063W 0603
3749	5322 117 13042	3.9kΩ 1% 0.063W 0603
3750	4822 051 30392	3.9kΩ 5% 0.063W 0603
3751	4822 051 30472	4.7kΩ 5% 0.062W
3752	4822 117 12917	1Ω 5% 0.062W 0603
3753	4822 117 12917	1Ω 5% 0.062W 0603
3754	4822 051 30101	100Ω 5% 0.062W
3755	4822 051 30472	4.7kΩ 5% 0.062W
3756	5322 117 13056	8.2kΩ 1% 0.063W 0603
3758	4822 051 30472	4.7kΩ 5% 0.062W
3759	4822 051 30221	220Ω 5% 0.062W
3762	4822 051 30101	100Ω 5% 0.062W
3764	4822 051 30109	10Ω 5% 0.062W
3770	4822 117 13545	100Ω 1% 0402
3771	4822 117 12971	15Ω 5% 0.62W 0603
3772	4822 117 12971	15Ω 5% 0.62W 0603
3773	4822 117 12925	47kΩ 1% 0.063W 0603
3774	4822 117 12925	47kΩ 1% 0.063W 0603
3781	4822 117 12925	47kΩ 1% 0.063W 0603
3782	4822 117 12925	47kΩ 1% 0.063W 0603
3783	4822 117 12925	47kΩ 1% 0.063W 0603
3792	4822 051 30102	1kΩ 5% 0.062W
3793	4822 051 30222	2.2kΩ 5% 0.062W
3794	4822 051 30109	10Ω 5% 0.062W
3795	4822 051 30109	10Ω 5% 0.062W
3796	4822 051 30101	100Ω 5% 0.062W
3797	4822 051 30101	100Ω 5% 0.062W
3798	4822 051 30472	4.7kΩ 5% 0.062W
3800	5322 117 13058	150Ω 1% 0.063W 0603
3802	5322 117 13058	150Ω 1% 0.063W 0603
3803	5322 117 13058	150Ω 1% 0.063W 0603
3804	4822 051 30102	1kΩ 5% 0.062W
3811	4822 051 30759	75Ω 5% 0.062W
3812	4822 051 30759	75Ω 5% 0.062W
3814	4822 051 30759	75Ω 5% 0.062W
3815	4822 051 30759	75Ω 5% 0.062W
3817	4822 051 30759	75Ω 5% 0.062W
3818	4822 051 30759	75Ω 5% 0.062W
3819	4822 051 30759	75Ω 5% 0.062W
3820	4822 051 30759	75Ω 5% 0.062W
3821	4822 051 30759	75Ω 5% 0.062W
3822	4822 051 30759	75Ω 5% 0.062W
3823	4822 051 30759	75Ω 5% 0.062W
3824	4822 051 30759	75Ω 5% 0.062W
3825	5322 117 13058	150Ω 1% 0.063W 0603
3826	5322 117 13058	150Ω 1% 0.063W 0603
3827	5322 117 13058	150Ω 1% 0.063W 0603
3828	4822 051 30339	33Ω 5% 0.062W
3829	4822 117 12971	15Ω 5% 0.62W 0603
3831	4822 117 13545	100Ω 1% 0402
3832	4822 117 13545	100Ω 1% 0402
3833	4822 117 13545	100Ω 1% 0402
3834	4822 117 13545	100Ω 1% 0402
3836	4822 117 13545	100Ω 1% 0402
3837	4822 117 13545	100Ω 1% 0402
3838	4822 117 13545	100Ω 1% 0402
3839	4822 117 13545	100Ω 1% 0402
3840	4822 117 13545	100Ω 1% 0402
3841	4822 117 13545	100Ω 1% 0402
3842	4822 117 13545	100Ω 1% 0402
3843	4822 117 13545	100Ω 1% 0402
3844	4822 117 13545	100Ω 1% 0402
3845	4822 117 13545	100Ω 1% 0402
3846	4822 051 30109	10Ω 5% 0.062W
3847	4822 051 30109	10Ω 5% 0.062W
3849	4822 051 30569	56Ω 5% 0.062W
3850	4822 117 13545	100Ω 1% 0402
3851	4822 117 13545	100Ω 1% 0402
3852	4822 117 13545	100Ω 1% 0402
3853	4822 117 13545	100Ω 1% 0402
3856	4822 051 30569	56Ω 5% 0.062W
3A00	4822 117 13601	22kΩ 5% 0402
3A01	4822 117 13606	10kΩ 5% 0.01W 0402
3A03⚠	4822 117 13568	6.8Ω 5% 1206
3A06	4822 117 13545	100Ω 1% 0402
3A09	4822 117 13601	22kΩ 5% 0402
3A11	4822 117 11297	100kΩ 5% 0.1W
3A13	3198 031 04730	47Ω 5% 0402
3A14	3198 031 04730	47Ω 5% 0402
3A15	4822 117 11297	100kΩ 5% 0.1W
3A16	4822 117 13545	100Ω 1% 0402
3A17	4822 117 13545	100Ω 1% 0402
3A19	4822 117 13545	100Ω 1% 0402
3A20	4822 117 11297	100kΩ 5% 0.1W
3A22	4822 117 13632	100kΩ 1% 0.62W 0603
3A23	4822 117 13603	33kΩ 5% 0402
3A25	4822 051 30331	330Ω 5% 0.062W
3A26	4822 117 13603	33kΩ 5% 0402
3A27	3198 031 01530	15kΩ 5% 0.01W 0402
3A28	3198 031 01530	15kΩ 5% 0.01W 0402
3A29	4822 051 30331	330Ω 5% 0.062W
3A30	4822 117 12925	47kΩ 1% 0.063W 0603
3A32	4822 117 13545	100Ω 1% 0402
3A33	4822 117 13545	100Ω 1% 0402
3A34	4822 117 13545	100Ω 1% 0402
3A35	4822 051 30105	1MΩ 5% 0.062W
3A36	4822 117 13545	100Ω 1% 0402
3A38	4822 051 30101	100Ω 5% 0.062W
3A3A	4822 117 13545	100Ω 1% 0402
3A3B	4822 117 13545	100Ω 1% 0402
3A3E	4822 117 13545	100Ω 1% 0402
3A3F	4822 117 13545	100Ω 1% 0402
3A40	4822 117 13632	100kΩ 1% 0.62W 0603
3A42	4822 117 13545	100Ω 1% 0402
3A45	3198 031 04730	47Ω 5% 0402
3A46	4822 117 11297	100kΩ 5% 0.1W
3A47	3198 031 04730	47Ω 5% 0402
3A48	4822 117 11297	100kΩ 5% 0.1W
3A49	3198 031 04730	47Ω 5% 0402
3A50	4822 117 13545	100Ω 1% 0402
3A51	3198 031 04730	47Ω 5% 0402
3A52	3198 031 04730	47Ω 5% 0402
3A53	3198 031 04730	47Ω 5% 0402
3A55	3198 031 04720	4.7kΩ 5% 0402
3A56	3198 031 04720	4.7kΩ 5% 0402
3A66	4822 117 11297	100kΩ 5% 0.1W
3C00	4822 051 30222	2.2kΩ 5% 0.062W
3C01	4822 051 30109	10Ω 5% 0.062W
3C03	4822 051 30103	10kΩ 5% 0.062W
3C04	4822 051 30103	10kΩ 5% 0.062W
3C05	4822 051 30471	470Ω 5% 0.062W
3C08	4822 051 30103	10kΩ 5% 0.062W
3C10	4822 051 30101	100Ω 5% 0.062W
3C11	4822 051 30101	100Ω 5% 0.062W
3D40	4822 117 10361	680Ω 1% 0.1W
3D41	4822 117 13606	10kΩ 5% 0.01W 0402
3D44	4822 117 13606	10kΩ 5% 0.01W 0402
3D45	4822 051 30101	100Ω 5% 0.062W
3D46	4822 051 30102	1kΩ 5% 0.062W
3D47	4822 051 30101	100Ω 5% 0.062W
3D48	4822 051 30102	1kΩ 5% 0.062W
3D49	4822 051 30759	75Ω 5% 0.062W
3D50	4822 051 30759	75Ω 5% 0.062W
3D51	2322 704 62002	2kΩ 1% 0603
3D52	2322 704 61002	1kΩ 1% 0603
3D53	4822 117 13548	1kΩ 5% 0402
3D54	4822 117 13601	22kΩ 5% 0402
3D55	2322 704 61002	1kΩ 1% 0603
3D56	2322 704 65102	5.1kΩ 1% 0603
3D57	5322 117 13047	330Ω 1% 0.063W 0603
3D58	4822 117 13548	1kΩ 5% 0402
3D60	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D61	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D62	4822 051 30103	10kΩ 5% 0.062W
3D63	2322 704 62202	2.2kΩ 1% 0603
3D64	4822 117 13548	1kΩ 5% 0402
3D65	4822 117 13548	1kΩ 5% 0402
3D66	4822 117 13601	22kΩ 5% 0402
3D67	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D68	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D69	4822 117 13548	1kΩ 5% 0402
3D70	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D71	4822 117 13548	1kΩ 5% 0402
3D72	4822 117 13601	22kΩ 5% 0402
3D73⚠	4822 117 11748	2.2Ω 5% 1206
3D79	2322 704 62202	2.2kΩ 1% 0603
3D80	4822 117 13545	100Ω 1% 0402
3D81	4822 117 10361	680Ω 1% 0.1W
3D82	4822 117 13545	100Ω 1% 0402
3D83	2322 704 61002	1kΩ 1% 0603
3D84	4822 117 13545	100Ω 1% 0402
3D85	4822 051 30471	470Ω 5% 0.062W
3D86	4822 117 13545	100Ω 1% 0402
3D87	4822 117 13632	100kΩ 1% 0.62W 0603
3D88	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D89	4822 051 30183	18kΩ 5% 0.062W
3D90	4822 117 12925	47kΩ 1% 0.063W 0603
3D92	4822 117 13606	10kΩ 5% 0.01W 0402
3D93	3198 031 04720	4.7kΩ 5% 0402
3D95	3198 031 04720	4.7kΩ 5% 0402
3D96	4822 117 13602	2.2kΩ 5% 0.01W 0402
3D97	4822 117 13545	100Ω 1% 0402
3D98	4822 117 13545	100Ω 1% 0402
3D99	4822 051 30759	75Ω 5% 0.062W
3E04	4822 051 30479	47Ω 5% 0.062W
3E05	3198 031 14710	4 x 470Ω 5% 1206
3E06	3198 031 14710	4 x 470Ω 5% 1206
3E07	2350 035 10152	4 x 1.5kΩ 5%
3E08⚠	4822 117 11151	1Ω 5%
3E11	2350 035 10152	4 x 1.5kΩ 5%
3E12	2350 035 10152	4 x 1.5kΩ 5%
3E14	4822 117 13545	100Ω 1% 0402
3E16	3198 031 03320	3.3kΩ 5% 0402
3E18	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E19	4822 117 13548	1kΩ 5% 0402
3E20	4822 117 13545	100Ω 1% 0402
3E21	4822 117 13548	1kΩ 5% 0402
3E22	2350 035 10152	4 x 1.5kΩ 5%
3E23	2350 035 10152	4 x 1.5kΩ 5%
3E24	2350 035 10152	4 x 1.5kΩ 5%
3E25	4822 117 13548	1kΩ 5% 0402
3E26	4822 117 13545	100Ω 1% 0402
3E27	4822 117 11297	100kΩ 5% 0.1W
3E28	4822 117 13548	1kΩ 5% 0402
3E29	4822 117 13597	330Ω 5% 0402 0.01W
3E30	4822 117 13545	100Ω 1% 0402
3E31	4822 117 13548	1kΩ 5% 0402

3E32	4822 117 13545	100Ω 1% 0402
3E33	4822 117 13545	100Ω 1% 0402
3E34	4822 117 13545	100Ω 1% 0402
3E35	4822 117 13545	100Ω 1% 0402
3E36	4822 117 13545	100Ω 1% 0402
3E37	4822 117 13548	1kΩ 5% 0402
3E38	4822 117 13545	100Ω 1% 0402
3E39	4822 117 13545	100Ω 1% 0402
3E40	4822 117 13545	100Ω 1% 0402
3E41	3198 031 14710	4 x 470Ω 5% 1206
3E42	3198 031 14710	4 x 470Ω 5% 1206
3E43	3198 031 14710	4 x 470Ω 5% 1206
3E44	3198 031 14710	4 x 470Ω 5% 1206
3E45	4822 117 13597	330Ω 5% 0402 0.01W
3E49	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E50	4822 117 13606	10kΩ 5% 0.01W 0402
3E51	4822 117 13606	10kΩ 5% 0.01W 0402
3E52	4822 117 13606	10kΩ 5% 0.01W 0402
3E53	4822 117 13606	10kΩ 5% 0.01W 0402
3E55	4822 117 13606	10kΩ 5% 0.01W 0402
3E56	4822 117 13603	33kΩ 5% 0402
3E57	4822 117 11297	100kΩ 5% 0.1W
3E60	4822 117 13606	10kΩ 5% 0.01W 0402
3E62	4822 117 13548	1kΩ 5% 0402
3E63	4822 117 13606	10kΩ 5% 0.01W 0402
3E69	3198 031 04720	4.7kΩ 5% 0402
3E70	3198 031 04720	4.7kΩ 5% 0402
3E73	4822 117 13606	10kΩ 5% 0.01W 0402
3E74	4822 117 13546	47Ω 5% 0402
3E75	4822 117 13548	1kΩ 5% 0402
3E77	4822 117 13546	47Ω 5% 0402
3E78	4822 117 13546	47Ω 5% 0402
3E79	4822 117 13546	47Ω 5% 0402
3E80	4822 117 13546	47Ω 5% 0402
3E88	4822 117 13546	47Ω 5% 0402
3E89	4822 117 13546	47Ω 5% 0402
3E91	3198 031 04730	47Ω 5% 0402
3E92	3198 031 04730	47Ω 5% 0402
3E93	3198 031 04730	47Ω 5% 0402
3I00	4822 117 13606	10kΩ 5% 0.01W 0402
3I08	4822 117 13548	1kΩ 5% 0402
3I28	4822 117 12925	47kΩ 1% 0.063W 0603
3I29	3198 031 01830	18kΩ 5% 0.01W 0402
3I30	4822 117 13606	10kΩ 5% 0.01W 0402
3I31	4822 117 13545	100Ω 1% 0402
3I34	4822 117 13601	22kΩ 5% 0402
3I35	4822 051 30101	100Ω 5% 0.062W
3I36	4822 117 13601	22kΩ 5% 0402
3I37	4822 051 30101	100Ω 5% 0.062W
3I38	3198 031 08220	8.2kΩ 5% 0.5W
3I39	3198 031 02720	2.7kΩ 5% 0.01W 0402
3I40	4822 051 30759	75Ω 5% 0.062W
3I50	4822 051 30151	150Ω 5% 0.062W
3I51	4822 051 30101	100Ω 5% 0.062W
3I52	4822 051 30151	150Ω 5% 0.062W
3I53	4822 051 30101	100Ω 5% 0.062W
3I54	4822 117 13545	100Ω 1% 0402
3I55	4822 051 30759	75Ω 5% 0.062W
3I56	4822 117 13545	100Ω 1% 0402
3I57	4822 051 30759	75Ω 5% 0.062W
3I58	4822 117 13545	100Ω 1% 0402
3I59	4822 051 30759	75Ω 5% 0.062W
3I60	4822 051 30759	75Ω 5% 0.062W
3I61	4822 051 30101	100Ω 5% 0.062W
3I62	4822 051 30101	100Ω 5% 0.062W
3I63	3198 031 03920	3.9kΩ 5% 0402
3I64	3198 031 08220	8.2kΩ 5% 0.5W
3I65	4822 051 30101	100Ω 5% 0.062W
3I66	4822 051 30759	75Ω 5% 0.062W
3I67	4822 051 30759	75Ω 5% 0.062W
3I68	4822 117 13545	100Ω 1% 0402
3I69	4822 051 30151	150Ω 5% 0.062W
3I70	4822 051 30101	100Ω 5% 0.062W
3I71	4822 051 30151	150Ω 5% 0.062W
3I72	4822 051 30101	100Ω 5% 0.062W
3I73	4822 117 13605	Jumper 0402
3I74	4822 051 30151	150Ω 5% 0.062W
3I75	4822 117 13545	100Ω 1% 0402
3I76	4822 117 13545	100Ω 1% 0402
3I77	4822 051 30759	75Ω 5% 0.062W
3I78	4822 051 30759	75Ω 5% 0.062W
3I79	4822 051 30101	100Ω 5% 0.062W
3I80	4822 051 30101	100Ω 5% 0.062W
3I81	3198 031 08220	8.2kΩ 5% 0.5W
3I82	3198 031 03920	3.9kΩ 5% 0402
3I83	4822 117 13545	100Ω 1% 0402
3I84	4822 051 30759	75Ω 5% 0.062W
3I85	4822 117 13545	100Ω 1% 0402
3I86	4822 051 30759	75Ω 5% 0.062W
3I87	4822 117 13605	Jumper 0402
3I89	4822 051 30151	150Ω 5% 0.062W
3I90	4822 051 30101	100Ω 5% 0.062W
3I91	4822 051 30151	150Ω 5% 0.062W
3I92	4822 051 30101	100Ω 5% 0.062W
3I98	4822 117 13606	10kΩ 5% 0.01W 0402
3IA2	4822 051 30101	100Ω 5% 0.062W
3IA3	4822 117 13601	22kΩ 5% 0402
3IA4	3198 031 08220	8.2kΩ 5% 0.5W
3IA5	3198 031 08220	8.2kΩ 5% 0.5W
3IA6	3198 031 08220	8.2kΩ 5% 0.5W
3IA7	3198 031 08220	8.2kΩ 5% 0.5W
3IB1	4822 117 13606	10kΩ 5% 0.01W 0402
3IB2	4822 051 30101	100Ω 5% 0.062W
3IB3	4822 117 13606	10kΩ 5% 0.01W 0402
3IB4	4822 051 30223	22kΩ 5% 0.062W
3IB5	4822 051 30103	10kΩ 5% 0.062W
3IB6	4822 117 13545	100Ω 1% 0402
3IB8	4822 117 13606	10kΩ 5% 0.01W 0402
3IB9	4822 117 13545	100Ω 1% 0402
3IC1▲	4822 117 13574	1.5Ω 5% 1206
3IC2	4822 117 13601	22kΩ 5% 0402
3IC3	4822 117 13601	22kΩ 5% 0402
3IC4	4822 051 30101	100Ω 5% 0.062W
3IC6	4822 051 30101	100Ω 5% 0.062W
3ID0	3198 031 04720	4.7kΩ 5% 0402
3ID1	4822 117 13545	100Ω 1% 0402
3ID2▲	4822 117 11151	1Ω 5%
3ID6	4822 051 30222	2.2kΩ 5% 0.062W
3ID7	4822 117 13545	100Ω 1% 0402
3ID8	4822 117 13545	100Ω 1% 0402
3IE0	4822 117 13606	10kΩ 5% 0.01W 0402
3IE1	4822 117 11297	100kΩ 5% 0.1W
3IE2	4822 051 30101	100Ω 5% 0.062W
3IE3	4822 051 30101	100Ω 5% 0.062W
3IE7	4822 051 30759	75Ω 5% 0.062W
3IE8	4822 051 30759	75Ω 5% 0.062W
3IE9	4822 117 13601	22kΩ 5% 0402
3IF0	4822 051 30759	75Ω 5% 0.062W
3IF1	4822 117 13543	470Ω 5% 0402
3IF2	3198 031 02720	2.7kΩ 5% 0.01W 0402
3IF3	4822 117 13606	10kΩ 5% 0.01W 0402
3IF4	4822 117 13543	470Ω 5% 0402
3IF5	4822 117 13601	22kΩ 5% 0402
3IF6	4822 051 30101	100Ω 5% 0.062W
3IF7	4822 051 30101	100Ω 5% 0.062W
3IF8	4822 117 13602	2.2kΩ 5% 0.01W 0402
3IF9	3198 031 03320	3.3kΩ 5% 0402
3IH0	4822 117 13548	1kΩ 5% 0402
3IH1	4822 117 13545	100Ω 1% 0402
3IH8	3198 031 04730	47Ω 5% 0402
3IH9	3198 031 04730	47Ω 5% 0402
3II0	4822 117 13606	10kΩ 5% 0.01W 0402
3II1	4822 117 13601	22kΩ 5% 0402
3II2	4822 117 13601	22kΩ 5% 0402
3II3	3198 031 04730	47Ω 5% 0402
3II4	3198 031 04730	47Ω 5% 0402
3IJ0	4822 117 13545	100Ω 1% 0402
3IJ1	4822 117 13545	100Ω 1% 0402
3IJ7	4822 117 13606	10kΩ 5% 0.01W 0402
3IJ8	4822 117 13606	10kΩ 5% 0.01W 0402
3IK2	4822 117 13601	22kΩ 5% 0402
3IK3	4822 117 13601	22kΩ 5% 0402
3IK7▲	4822 117 11152	4.7Ω 5% 0.062W
3IN5	4822 117 13601	22kΩ 5% 0402
3IN6	4822 117 13601	22kΩ 5% 0402
3IN7	4822 117 10361	680Ω 1% 0.1W
3IP0	5322 117 13056	8.2kΩ 1% 0.063W 0603
3IP1	4822 117 11817	1.2kΩ 1% 0.062W
3IP2	4822 051 30221	220Ω 5% 0.062W
3IP3	4822 051 30151	150Ω 5% 0.062W
3IP4	4822 051 30221	220Ω 5% 0.062W
3IP5▲	4822 117 11748	2.2Ω 5% 1206
3IP6	4822 051 30102	1kΩ 5% 0.062W
3IP7	4822 051 30272	2.7kΩ 5% 0.062W
3IP8	4822 051 30103	10kΩ 5% 0.062W
3IQ0	4822 051 30109	10Ω 5% 0.062W
3IQ4	4822 117 10361	680Ω 1% 0.1W
3IQ5	4822 117 13545	100Ω 1% 0402
3IQ6	4822 051 30759	75Ω 5% 0.062W
3IS0	4822 117 12521	68Ω 1% 0.1W
3IS1	4822 117 12521	68Ω 1% 0.1W
3IS2	4822 051 30101	100Ω 5% 0.062W
3IS3	4822 051 30101	100Ω 5% 0.062W
3IS4	4822 051 30101	100Ω 5% 0.062W
3IT0	4822 117 12925	47kΩ 1% 0.063W 0603
3IT1	4822 117 12925	47kΩ 1% 0.063W 0603
3IT5	4822 117 12521	68Ω 1% 0.1W
3IT6	4822 117 12521	68Ω 1% 0.1W
3IT8	4822 051 30103	10kΩ 5% 0.062W
3L03	4822 117 13545	100Ω 1% 0402
3L04	4822 117 13545	100Ω 1% 0402
3L05	4822 117 13545	100Ω 1% 0402
3L06	4822 117 13545	100Ω 1% 0402
3L07	4822 117 13606	10kΩ 5% 0.01W 0402
3L08	3198 031 02720	2.7kΩ 5% 0.01W 0402
3L11	4822 117 13545	100Ω 1% 0402
3L12	4822 117 13543	470Ω 5% 0402
3L17	4822 051 30471	470Ω 5% 0.062W
3L22	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L23	4822 051 30471	470Ω 5% 0.062W
3L24	2350 033 91002	4 x jumper ARV341
3L25	2350 033 91002	4 x jumper ARV341
3L26	2350 033 91002	4 x jumper ARV341
3L27	2350 033 91002	4 x jumper ARV341
3L28	4822 117 13543	470Ω 5% 0402
3L29	2350 033 91002	4 x jumper ARV341
3L30	2350 033 91002	4 x jumper ARV341
3L31	4822 051 20471	470Ω 5% 0.1W
3L32	4822 051 20471	470Ω 5% 0.1W
3P65	4822 117 13545	100Ω 1% 0402
3P66	4822 117 13545	100Ω 1% 0402
3P67	3198 031 04720	4.7kΩ 5% 0402
3P69	3198 031 04720	4.7kΩ 5% 0402
3S01	4822 051 30008	Jumper 0603
3S02	4822 051 30223	22kΩ 5% 0.062W
3S03	4822 051 30223	22kΩ 5% 0.062W
3S04	3198 031 03320	3.3kΩ 5% 0402
3S05	3198 031 05620	5.6 kΩ 5% 0.01W 0402
3S06	4822 117 12925	47kΩ 1% 0.063W 0603
3S07	4822 051 30103	10kΩ 5% 0.062W
3S08	4822 051 30221	220Ω 5% 0.062W
3S09	4822 117 13606	10kΩ 5% 0.01W 0402
3S10	3198 031 01530	15kΩ 5% 0.01W 0402
3S11	4822 051 30101	100Ω 5% 0.062W
3U47	4822 051 30103	10kΩ 5% 0.062W
3U48	4822 051 30103	10kΩ 5% 0.062W
3U49	4822 051 30102	1kΩ 5% 0.062W
3U50	4822 051 30474	470kΩ 5% 0.062W
3U56	4822 051 30103	10kΩ 5% 0.062W
3U57	4822 051 30222	2.2kΩ 5% 0.062W
3U58	4822 051 30392	3.9kΩ 5% 0.063W 0603
3U59	4822 117 12925	47kΩ 1% 0.063W 0603
3V03	4822 117 13546	47Ω 5% 0402
3V04	4822 117 13546	47Ω 5% 0402
3V05	4822 117 13546	47Ω 5% 0402
3V06	4822 117 13545	100Ω 1% 0402
3V07	3198 031 04720	4.7kΩ 5% 0402
3V08	4822 117 13548	1kΩ 5% 0402
3V09	4822 117 13545	100Ω 1% 0402
3V10	4822 117 13545	100Ω 1% 0402
3V11	4822 117 13545	100Ω 1% 0402
3V12	4822 117 13545	100Ω 1% 0402
3V13	3198 031 04720	4.7kΩ 5% 0402
3V14	4822 117 13546	47Ω 5% 0402
3V15	4822 117 13546	47Ω 5% 0402
3V16	4822 117 13546	47Ω 5% 0402
3V17	3198 031 04720	4.7kΩ 5% 0402
3Y02	4822 117 13545	100Ω 1% 0402
3Y03▲	4822 117 11151	1Ω 5%
9001	4822 051 30008	Jumper 0603
9002	4822 051 30008	Jumper 0603
9010	4822 051 30008	Jumper 0603
9011	4822 051 30008	Jumper 0603
9012	4822 051 30008	Jumper 0603
9013	4822 051 30008	Jumper 0603
9016	4822 051 30008	Jumper 0603
9019	4822 051 30008	Jumper 0603
9020	4822 051 30008	Jumper 0603
9318	4822 051 30008	Jumper 0603
9322	4822 051 30101	100Ω 5% 0.062W
9406	4822 051 30008	Jumper 0603
9410	4822 051 30008	Jumper 0603
9413	4822 051 30008	Jumper 0603
9416	4822 051 30008	Jumper 0603
9417	4822 051 30008	Jumper 0603
9418	4822 051 30008	Jumper 0603
9419	4822 051 30008	Jumper 0603
9420	4822 051 30008	Jumper 0603
9702	4822 051 30008	Jumper 0603
9703	4822 051 30008	Jumper 0603
9708	4822 051 30008	Jumper 0603
9712	4822 051 30008	Jumper 0603
9714	4822 051 30008	Jumper 0603
9716	4822 051 30008	Jumper 0603
9717	4822 051 30008	Jumper 0603
9721	4822 051 30008	Jumper 0603
9723	4822 051 30008	Jumper 0603
9725	4822 051 30008	Jumper 0603
9727	4822 051 30008	Jumper 0603
9728	4822 051 30008	Jumper 0603
9729	4822 051 30008	Jumper 0603
9744	4822 051 30008	Jumper 0603
9747	4822 051 30008	Jumper 0603
9760	4822 051 30008	Jumper 0603
9761	4822 051 30008	Jumper 0603
9762	4822 051 30008	Jumper 0603
9763	4822 051 30008	Jumper 0603
9764	4822 051 30008	Jumper 0603
9765	4822 051 30008	Jumper 0603
9766	4822 051 30008	Jumper 0603
9772	4822 051 30008	Jumper 0603
9A00	4822 117 13605	Jumper 0402

9A01	4822 117 13605	Jumper 0402
9A04	4822 117 13605	Jumper 0402
9A05	4822 117 13605	Jumper 0402
9A06	4822 117 13605	Jumper 0402
9A09	4822 051 20008	Jumper 0805
9C02	4822 051 30008	Jumper 0603
9D55	4822 051 30008	Jumper 0603
9E54	4822 117 13605	Jumper 0402
9I00	4822 117 13605	Jumper 0402
9I02	4822 117 13605	Jumper 0402
9I13	4822 051 30008	Jumper 0603
9I32	4822 117 13605	Jumper 0402
9I33	4822 117 13605	Jumper 0402
9I34	4822 117 13605	Jumper 0402
9I35	4822 117 13605	Jumper 0402
9I36	4822 117 13605	Jumper 0402
9I37	4822 117 13605	Jumper 0402
9I39	4822 117 13605	Jumper 0402
9I41	4822 117 13605	Jumper 0402
9I48	4822 117 13605	Jumper 0402
9I49	4822 117 13605	Jumper 0402
9I77	4822 117 13605	Jumper 0402
9I79	4822 117 13605	Jumper 0402
9I81	4822 117 13605	Jumper 0402
9I82	4822 117 13605	Jumper 0402
9I88	4822 117 13605	Jumper 0402
9I89	4822 117 13605	Jumper 0402
9IB5	4822 117 13605	Jumper 0402
9IB9	4822 117 13605	Jumper 0402
9IC1	4822 117 13605	Jumper 0402
9IC2	4822 117 13605	Jumper 0402
9IC3	4822 117 13605	Jumper 0402
9ID1	4822 051 30008	Jumper 0603
9ID2	4822 051 30008	Jumper 0603
9ID3	4822 051 30008	Jumper 0603
9ID4	4822 051 30008	Jumper 0603
9IS0	4822 117 13545	100Ω 1% 0402
9IS2	4822 117 13605	Jumper 0402
9IS3	4822 117 13605	Jumper 0402
9L04	4822 051 30008	Jumper 0603
9P69	4822 117 13605	Jumper 0402
9P70	4822 117 13605	Jumper 0402
9P71	4822 117 13605	Jumper 0402
9S01	4822 051 30008	Jumper 0603
9S02	4822 051 30008	Jumper 0603
9S03	4822 051 30008	Jumper 0603
9S04	4822 051 30008	Jumper 0603
9S05	4822 051 30008	Jumper 0603
9S06	4822 051 30008	Jumper 0603
9S07	4822 051 30008	Jumper 0603
9S08	4822 051 30008	Jumper 0603
9S09	4822 051 30008	Jumper 0603
9S11	4822 051 30008	Jumper 0603
9S13	4822 051 30008	Jumper 0603
9S14	4822 051 30008	Jumper 0603
9S15	4822 051 30008	Jumper 0603
9S16	4822 051 30008	Jumper 0603
9S17	4822 051 30008	Jumper 0603
9S30	4822 051 30008	Jumper 0603
9S31	4822 051 30008	Jumper 0603
9S32	4822 051 30008	Jumper 0603
9S33	4822 051 30008	Jumper 0603
9S34	4822 051 30008	Jumper 0603
9S35	4822 051 30008	Jumper 0603
9S36	4822 051 30008	Jumper 0603
9S37	4822 051 30008	Jumper 0603
9S38	4822 051 30008	Jumper 0603
9S65	4822 051 30008	Jumper 0603
9T01	4822 051 30223	22kΩ 5% 0.062W
9T04	4822 051 30008	Jumper 0603
9T07	4822 051 30008	Jumper 0603
9T08	4822 051 30008	Jumper 0603
9T11	4822 051 30008	Jumper 0603
9T12	4822 051 30008	Jumper 0603
9T13	4822 051 30008	Jumper 0603
9T14	4822 051 20008	Jumper 0805
9T15	4822 051 30008	Jumper 0603
9U99	2038 035 13207	1000µF 20% 16V
9Y01	4822 117 13605	Jumper 0402
9Y03	4822 117 13605	Jumper 0402

5401	3198 018 56880	6.8µH 10% 0603
5403	2422 549 44461	Trimmer 40MHz 5CCE
5404	2422 535 95427	Bead 120Ω at 100MHz
5405	2422 535 95427	Bead 120Ω at 100MHz
5406	3198 018 52280	2.2µH 10% 0603
5408	2422 549 44983	Trimmer 78MHz 5CCB
5411	3198 018 32770	0.27µH 10% 0805
5415	4822 157 11716	Bead 30Ω at 100MHz
5416	4822 157 11716	Bead 30Ω at 100MHz
5700	4822 157 11716	Bead 30Ω at 100MHz
5701	4822 157 11716	Bead 30Ω at 100MHz
5702	4822 157 11716	Bead 30Ω at 100MHz
5703	4822 157 71206	Bead 600Ω at 100MHz
5706	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11716	Bead 30Ω at 100MHz
5710	4822 157 11716	Bead 30Ω at 100MHz
5711	4822 157 11716	Bead 30Ω at 100MHz
5712	4822 156 21729	Bead 1kΩ at 100MHz
5713	4822 157 11716	Bead 30Ω at 100MHz
5714	4822 157 71206	Bead 600Ω at 100MHz
5715	4822 157 11716	Bead 30Ω at 100MHz
5716	4822 156 21729	Bead 1kΩ at 100MHz
5717	4822 156 21729	Bead 1kΩ at 100MHz
5718	4822 157 11716	Bead 30Ω at 100MHz
5719	4822 156 21729	Bead 1kΩ at 100MHz
5720	4822 157 11876	6.8µH 10% 0805
5721	4822 157 11716	Bead 30Ω at 100MHz
5722	4822 157 11716	Bead 30Ω at 100MHz
5724	4822 156 21729	Bead 1kΩ at 100MHz
5725	4822 157 11716	Bead 30Ω at 100MHz
5726	4822 156 21729	Bead 1kΩ at 100MHz
5727	4822 156 21729	Bead 1kΩ at 100MHz
5728	4822 157 11716	Bead 30Ω at 100MHz
5729	4822 157 11716	Bead 30Ω at 100MHz
5731	4822 156 21729	Bead 1kΩ at 100MHz
5736	4822 157 11876	6.8µH 10% 0805
5737	4822 156 21729	Bead 1kΩ at 100MHz
5742	4822 157 11716	Bead 30Ω at 100MHz
5743	4822 157 11716	Bead 30Ω at 100MHz
5744	4822 157 11716	Bead 30Ω at 100MHz
5746	4822 157 11716	Bead 30Ω at 100MHz
5747	4822 157 11716	Bead 30Ω at 100MHz
5748	4822 157 11716	Bead 30Ω at 100MHz
5750	4822 157 11716	Bead 30Ω at 100MHz
5751	4822 157 11716	Bead 30Ω at 100MHz
5752	4822 157 11716	Bead 30Ω at 100MHz
5753	4822 157 11716	Bead 30Ω at 100MHz
5754	4822 157 11716	Bead 30Ω at 100MHz
5755	4822 157 11716	Bead 30Ω at 100MHz
5756	4822 157 11716	Bead 30Ω at 100MHz
5757	4822 157 11716	Bead 30Ω at 100MHz
5A00	4822 157 11716	Bead 30Ω at 100MHz
5A01	4822 157 11716	Bead 30Ω at 100MHz
5A03	4822 157 11716	Bead 30Ω at 100MHz
5A06	4822 157 11716	Bead 30Ω at 100MHz
5A17	4822 051 30151	150Ω 5% 0.062W
5A18	4822 051 30151	150Ω 5% 0.062W
5A19	4822 157 11828	22µH 20% 0805
5A20	4822 157 11716	Bead 30Ω at 100MHz
5A21	4822 157 11716	Bead 30Ω at 100MHz
5D51	4822 157 11716	Bead 30Ω at 100MHz
5D52	4822 157 11716	Bead 30Ω at 100MHz
5D54	4822 157 11716	Bead 30Ω at 100MHz
5D56	4822 156 21729	Bead 1kΩ at 100MHz
5D57	4822 157 11716	Bead 30Ω at 100MHz
5D58	4822 157 11716	Bead 30Ω at 100MHz
5D59	4822 157 11716	Bead 30Ω at 100MHz
5E00	2422 549 42896	Bead 120Ω at 100MHz
5E01	2422 549 42896	Bead 120Ω at 100MHz
5E02	2422 549 42896	Bead 120Ω at 100MHz
5E03	2422 549 42896	Bead 120Ω at 100MHz
5E04	2422 549 42896	Bead 120Ω at 100MHz
5E05	2422 549 42896	Bead 120Ω at 100MHz
5E08	4822 157 11716	Bead 30Ω at 100MHz
5E50	2422 549 43062	Bead 600Ω at 100MHz
5E51	2422 549 43062	Bead 600Ω at 100MHz
5E53	2422 535 94134	10µH 20% 0805
5E57	2422 549 43062	Bead 600Ω at 100MHz
5E58	2422 549 43062	Bead 600Ω at 100MHz
5I02	2422 549 43769	Bead 30Ω at 100MHz
5I03	2422 549 43062	Bead 600Ω at 100MHz
5I04	2422 549 43062	Bead 600Ω at 100MHz
5I05	4822 157 11716	Bead 30Ω at 100MHz
5I06	4822 157 11716	Bead 30Ω at 100MHz
5I07	2422 549 43769	Bead 30Ω at 100MHz
5I08	2422 549 43062	Bead 600Ω at 100MHz
5I09	4822 157 11716	Bead 30Ω at 100MHz
5I10	2422 536 00667	1000µF 20% 7032
5I11	2422 549 43062	Bead 600Ω at 100MHz
5I21	2422 549 43769	Bead 30Ω at 100MHz
5I22	2422 549 43769	Bead 30Ω at 100MHz
5I23	2422 549 43769	Bead 30Ω at 100MHz
5L02	3198 018 51080	1µH 10% 0603
5L04	3198 018 54770	0.47µF 10% 0603
5L06	3198 018 51080	1µH 10% 0603
5L07	4822 157 11716	Bead 30Ω at 100MHz
5L08	4822 157 11716	Bead 30Ω at 100MHz
5L09	4822 157 11716	Bead 30Ω at 100MHz
5L10	4822 157 11716	Bead 30Ω at 100MHz
5L11	4822 157 11716	Bead 30Ω at 100MHz
5L12	4822 157 11716	Bead 30Ω at 100MHz
5L13	4822 156 21729	Bead 1kΩ at 100MHz
5L14	4822 156 21729	Bead 1kΩ at 100MHz
5L15	4822 156 21729	Bead 1kΩ at 100MHz
5L16	4822 117 10353	150Ω 1% 0.1W
5L17	4822 117 10353	150Ω 1% 0.1W
5L18	4822 117 10353	150Ω 1% 0.1W
5L21	4822 117 10353	150Ω 1% 0.1W
5P51	4822 157 11716	Bead 30Ω at 100MHz
5S01	4822 157 11716	Bead 30Ω at 100MHz
5S02	4822 157 11716	Bead 30Ω at 100MHz
5S03	4822 157 11716	Bead 30Ω at 100MHz
5S04	4822 157 11716	Bead 30Ω at 100MHz
5S05	4822 157 11716	Bead 30Ω at 100MHz
5T02	2422 535 94134	10µH 20% 0805
5U05	2422 535 94134	10µH 20% 0805
5U06	2422 535 94134	10µH 20% 0805
5U07	4822 157 11716	Bead 30Ω at 100MHz
5U08	4822 157 11716	Bead 30Ω at 100MHz
5V06	3198 018 90050	Bead 1kΩ at 100MHz
5V07	3198 018 90050	Bead 1kΩ at 100MHz
5V08	3198 018 90050	Bead 1kΩ at 100MHz
5Y01	2422 549 45325	Bead 67Ω at 100MHz.
5Y02	2422 549 45325	Bead 67Ω at 100MHz.
5Y03	2422 549 45325	Bead 67Ω at 100MHz.
5Y04	2422 549 45325	Bead 67Ω at 100MHz.
5Y05	2422 549 45325	Bead 67Ω at 100MHz.

6000	4822 130 11416	PDZ6.8B
6001	4822 130 80622	BAT54
6002	4822 130 11397	BAS316
6003	4822 130 80622	BAT54
6004	4822 130 80622	BAT54
6005	4822 130 11422	PLVA2650A
6403	9340 552 30115	BA591
6830	4822 130 11397	BAS316
6831	4822 130 11397	BAS316
6832	4822 130 11397	BAS316
6833	4822 130 11397	BAS316
6834	4822 130 11397	BAS316
6835	4822 130 11397	BAS316
6836	4822 130 11397	BAS316
6837	4822 130 11397	BAS316
6838	4822 130 11397	BAS316
6839	4822 130 11397	BAS316
6840	4822 130 11397	BAS316
6841	4822 130 11397	BAS316
6842	4822 130 11397	BAS316
6843	4822 130 11397	BAS316
6844	4822 130 11397	BAS316
6845	4822 130 11397	BAS316
6846	4822 130 11397	BAS316
6847	4822 130 11397	BAS316
6A00	4822 130 11551	UDZS10B
6A01	4822 130 10838	UDZ3.3B
6A02	4822 130 11397	BAS316
6D53	9340 553 52115	BAS321
6D54	9340 553 52115	BAS321
6D55	9340 553 52115	BAS321
6D56	9340 553 52115	BAS321
6D57	4822 130 11423	PLVA2656A
6D58	4822 130 11423	PLVA2656A
6D59	4822 130 11423	PLVA2656A
6D60	4822 130 11423	PLVA2656A
6D61	4822 130 11423	PLVA2656A
6D62	4822 130 11564	UDZ3.9B
6D63	4822 130 11397	BAS316
6D64	4822 130 11397	BAS316
6E54	4822 130 11397	BAS316
6E55	4822 130 11397	BAS316
6I03	5322 130 34337	BAV99
6I04	5322 130 34337	BAV99
6I05	4822 130 11397	BAS316
6I07	5322 130 34337	BAV99
6I08	5322 130 34337	BAV99
6I10	4822 130 11416	PDZ6.8B
6I11	4822 130 11416	PDZ6.8B
6I12	4822 130 11416	PDZ6.8B
6I13	4822 130 11416	PDZ6.8B
6I14	9340 548 61115	PDZ12B
6I15	4822 130 11416	PDZ6.8B
6I22	4822 130 11416	PDZ6.8B
6I23	4822 130 11416	PDZ6.8B
6I24	4822 130 11416	PDZ6.8B
6I25	4822 130 11416	PDZ6.8B
6I26	4822 130 11416	PDZ6.8B
6I27	4822 130 11416	PDZ6.8B
6I28	4822 130 11416	PDZ6.8B
6I29	4822 130 11416	PDZ6.8B
6I30	4822 130 11416	PDZ6.8B
6I31	4822 130 11416	PDZ6.8B
6I32	4822 130 11416	PDZ6.8B
6I33	4822 130 11416	PDZ6.8B
6I34	4822 130 11416	PDZ6.8B
6I35	4822 130 11416	PDZ6.8B

6I36	4822 130 11416	PDZ6.8B
6I37	4822 130 11416	PDZ6.8B
6I38	4822 130 11416	PDZ6.8B
6I39	4822 130 11416	PDZ6.8B
6I40	4822 130 11416	PDZ6.8B
6I41	4822 130 11416	PDZ6.8B
6I42	4822 130 11416	PDZ6.8B
6I43	4822 130 11416	PDZ6.8B
6I44	4822 130 11416	PDZ6.8B
6I45	4822 130 11416	PDZ6.8B
6I46	4822 130 11416	PDZ6.8B
6I47	4822 130 11416	PDZ6.8B
6I48	4822 130 11416	PDZ6.8B
6I49	9340 548 61115	PDZ12B
6I50	4822 130 11416	PDZ6.8B
6I51	4822 130 11416	PDZ6.8B
6I52	4822 130 11416	PDZ6.8B
6I53	4822 130 11416	PDZ6.8B
6I54	4822 130 11416	PDZ6.8B
6I55	4822 130 11416	PDZ6.8B
6I56	4822 130 11416	PDZ6.8B
6I69	4822 130 11416	PDZ6.8B
6I70	4822 130 11416	PDZ6.8B
6I90	4822 130 11416	PDZ6.8B
6I91	4822 130 11416	PDZ6.8B
6I92	4822 130 11416	PDZ6.8B
6I93	4822 130 11416	PDZ6.8B
6I94	4822 130 11397	BAS316
6I95	4822 130 11397	BAS316
6I96	4822 130 11397	BAS316
6I97	4822 130 11397	BAS316
6I98	4822 130 11397	BAS316
6I99	4822 130 11397	BAS316
6IA0	9340 548 61115	PDZ12B
6IA6	4822 130 11397	BAS316
6IA7	4822 130 11397	BAS316
6T01	4822 130 11397	BAS316
6T03	4822 130 11397	BAS316
6T08	9340 548 71115	PDZ33B
6U16	4822 130 11522	UDZ15B
6V01	4822 130 11397	BAS316
6V02	4822 130 11397	BAS316
6V03	4822 130 11397	BAS316

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7001	9352 684 81557	SAA5801H/015
7002	3198 010 42320	BC857BW
7003	3198 010 42310	BC847BW
7004	3198 010 42310	BC847BW
7005	9322 172 45668	LF33ABDT
7007	9322 157 20668	MSM51V18165F-60J
7008	3198 010 42310	BC847BW
7009	3198 010 42310	BC847BW
7010	3198 010 42320	BC857BW
7012	9322 156 72668	M29W400BT-90N1
7013	3198 010 42310	BC847BW
7014	3198 010 42320	BC857BW
7017	4822 130 10255	MUN2213
7018	9352 115 40118	74LVC245APW
7019	9352 115 40118	74LVC245APW
7020	3198 010 42310	BC847BW
7066	3104 317 45871	Software (check Prod.Surv)
7067	3104 317 45611	Software (check Prod.Surv)
7070	3104 317 45891	Software (check Prod.Surv)
7307	9352 630 99118	TDA9181T
7320	3198 010 42310	BC847BW
7322	3198 010 42310	BC847BW
7323	9352 625 24518	TDA9321H/N2
7402	3198 010 42310	BC847BW
7403	5322 130 60159	BC846B
7407	4822 130 60373	BC856B
7410	3198 010 42310	BC847BW
7411	5322 130 60159	BC846B
7414	3198 010 42310	BC847BW
7415	3198 010 42310	BC847BW
7706	9322 142 88668	LF25CDT
7707	5322 130 60159	BC846B
7708	5322 130 60159	BC846B
7709	5322 130 60159	BC846B
7710	5322 130 60159	BC846B
7711	2422 486 80938	Socket 32p f
7712	9351 870 00118	74HC573PW
7713	9352 688 09557	SAA4978H/V204
7714	9965 000 02179	MS81V04160-25TB
7715	4822 209 73852	PMBT2369
7717	9322 183 81668	MSM54V12222B-25JS
7718	9352 695 58557	SAA4993H/V1
7719	9322 183 81668	MSM54V12222B-25JS
7722	9965 000 02179	MS81V04160-25TB
7723	9965 000 02179	MS81V04160-25TB
7724	9322 188 08702	T8F24EF-0002 EAGLE
7725	4822 209 73852	PMBT2369
7727	9322 170 14668	LF15ABDT
7740	9352 687 20125	74LVC1G125GW
7741	9352 687 20125	74LVC1G125GW
7742	9352 115 40118	74LVC245APW
7743	9352 115 40118	74LVC245APW
7744	9352 115 40118	74LVC245APW
7745	9352 115 40118	74LVC245APW
7746	9322 190 24668	CY2302SC-1
7747	9352 687 21165	74LVC1G126GW
7748	9352 687 20125	74LVC1G125GW
7999	3104 317 45521	Software (check Prod.Surv.)
7A00	4822 209 30095	LM833D
7A01	3198 010 42310	BC847BW
7A02	9322 196 03702	MSP3411G-QI-B8V3
7A03	4822 209 30095	LM833D
7A07	9322 183 05668	TS482ID
7A08	4822 130 60373	BC856B
7A09	4822 130 60373	BC856B
7A10	9340 425 20115	BC847BS
7D51	4822 209 12776	TDA8601T/C1
7D52	4822 130 62755	BF570
7D53	4822 130 62755	BF570
7D54	4822 130 62755	BF570
7D55	4822 130 62755	BF570
7D57	9322 131 22668	TSH95D
7D59	9322 145 26668	M24C02-WMN6
7E02	9322 196 51668	EPCS1SI8
7E05	9322 170 14668	LF15ABDT
7E08	3198 010 42320	BC857BW
7E09	9322 195 65668	AD9066JR
7E10	9352 686 35118	PCA9515DP
7E12	9340 425 20115	BC847BS
7E13	3198 010 42320	BC857BW
7E14	3198 010 42310	BC847BW
7E16	9322 195 65668	AD9066JR
7E17	3198 010 42320	BC857BW
7E18	9322 146 75685	TS431L
7E19	3198 010 42310	BC847BW
7E20	3198 010 42320	BC857BW
7E21	3198 010 42310	BC847BW
7E22	3198 010 42310	BC847BW
7E23	3198 010 42320	BC857BW
7E24	9322 146 75685	TS431L
7I01	9340 425 20115	BC847BS
7I02	9340 425 20115	BC847BS
7I05	3198 010 42320	BC857BW
7I07	4822 130 60142	BC869
7I09	3198 010 42310	BC847BW
7I10	9352 686 35118	PCA9515DP
7I11	4822 130 10255	MUN2213
7I12	4822 130 10255	MUN2213
7I13	4822 130 42804	BC817-25
7I14	3198 010 42310	BC847BW
7I15	3198 010 42310	BC847BW
7I16	9340 425 20115	BC847BS
7I17	9322 116 87668	TEA6422D
7I19	9352 686 35118	PCA9515DP
7I20	9351 869 40118	74HC4053PW
7I22	9340 425 20115	BC847BS
7I35	3198 010 42310	BC847BW
7I36	3198 010 42310	BC847BW
7I37	3198 010 42320	BC857BW
7I38	3198 010 42320	BC857BW
7I44	9340 425 20115	BC847BS
7L01	9322 181 72671	AD9883AKST-110
7L02	4822 209 17398	LD1117DT33
7L03	4822 209 73852	PMBT2369
7P56	4822 209 17345	M62320FP
7S03	9340 425 20115	BC847BS
7S04	3198 010 42310	BC847BW
7U14	3198 010 42310	BC847BW
7U15	3198 010 42320	BC857BW
7U16	9322 091 04668	SI4410DY
7V01	9322 196 44671	EP1C6Q240C8
7V02	9322 159 45668	DS90C385MTD

EMC Interface [EMC]

Various

0002	3122 358 76831	EMC foam fiter panel
1320	2422 025 16545	Connector 10p m
1330	2422 025 16545	Connector 10p m
1345	2422 025 16835	Connector 3p m
1355	2422 025 16835	Connector 3p m

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2300	5322 126 11583	10nF 10% 50V 0603
2301	5322 126 11583	10nF 10% 50V 0603
2302	3198 016 31020	1nF 10% 25V 0603
2303	5322 126 11583	10nF 10% 50V 0603
2304	5322 126 11583	10nF 10% 50V 0603
2305	5322 126 11583	10nF 10% 50V 0603
2306	5322 126 11583	10nF 10% 50V 0603
2307	5322 126 11583	10nF 10% 50V 0603
2308	5322 126 11583	10nF 10% 50V 0603

-WW-

3300	4822 051 30101	100Ω 5% 0.062W
3301	4822 051 30101	100Ω 5% 0.062W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3305	4822 051 30101	100Ω 5% 0.062W
3306	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30101	100Ω 5% 0.062W

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5300	2422 549 43062	Bead 600Ω at 100MHz
5301	2422 549 43062	Bead 600Ω at 100MHz
5302	2422 549 43062	Bead 600Ω at 100MHz
5303	2422 549 43062	Bead 600Ω at 100MHz
5304	2422 549 43062	Bead 600Ω at 100MHz
5305	2422 549 43062	Bead 600Ω at 100MHz
5306	2422 549 43062	Bead 600Ω at 100MHz
5307	2422 549 43062	Bead 600Ω at 100MHz
5308	2422 549 43062	Bead 600Ω at 100MHz
5309	2422 549 43062	Bead 600Ω at 100MHz
5310	2422 549 43062	Bead 600Ω at 100MHz
5311	2422 549 43062	Bead 600Ω at 100MHz
5312	2422 549 43062	Bead 600Ω at 100MHz
5313	2422 549 43062	Bead 600Ω at 100MHz

Led + Switch [LD]

Various

0320	2422 025 16545	Connector 10p m
1101	2422 128 02927	Switch push 2p

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2107	4822 124 12095	100µF 20% 16V
2120	2020 024 90166	10µF 20% 35V
2126	4822 126 14583	470nF 10% 16V 0805

-WW-

3101	4822 051 30151	150Ω 5% 0.062W
3102	4822 117 13632	100kΩ 1% 0.62W 0603
3103	4822 051 30561	560Ω 5% 0.062W
3104	4822 117 13632	100kΩ 1% 0.62W 0603
3105	4822 051 30102	1kΩ 5% 0.062W
3106	4822 051 30151	150Ω 5% 0.062W
3107	4822 051 30471	470Ω 5% 0.062W
3108	4822 051 30103	10kΩ 5% 0.062W
3109	4822 051 30101	100Ω 5% 0.062W
3120	4822 051 30472	4.7kΩ 5% 0.062W
3121	4822 051 30103	10kΩ 5% 0.062W
3122	4822 051 30332	3.3kΩ 5% 0.062W
3123	4822 051 30332	3.3kΩ 5% 0.062W
3124	4822 051 30102	1kΩ 5% 0.062W
3126▲	2322 702 60335	3.3MΩ 5% 0603
3127▲	2322 702 60335	3.3MΩ 5% 0603
4101	4822 051 30008	Jumper 0603
4107	4822 051 30008	Jumper 0603

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5100	2422 549 43769	Bead 30Ω at 100MHz

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6101	4822 130 11564	UDZ3.9B
6103	4822 130 83915	TLMV3100
6105	4822 130 11564	UDZ3.9B
6127	9322 140 63685	TEMD5000

7103	3198 010 42320	BC857BW
7105	3198 010 42320	BC857BW
7107	9322 178 03667	TSOP2136YA1
7120	5322 209 82941	LM358D

Top Control Panel [P]

Various

0053	3104 308 10551	TC assy knob R LCD 30"
0055	3104 308 10561	TC assy knob L LCD 30"
0057	3104 304 25831	TC frame LCD 30"
0058	3104 308 10571	TC assy knob M LCD 30"
0345	4822 267 10459	Connector 3p
1701	2422 128 02778	Tact switch
1702	2422 128 02778	Tact switch
1703	2422 128 02778	Tact switch
1704	2422 128 02778	Tact switch
1705	2422 128 02778	Tact switch

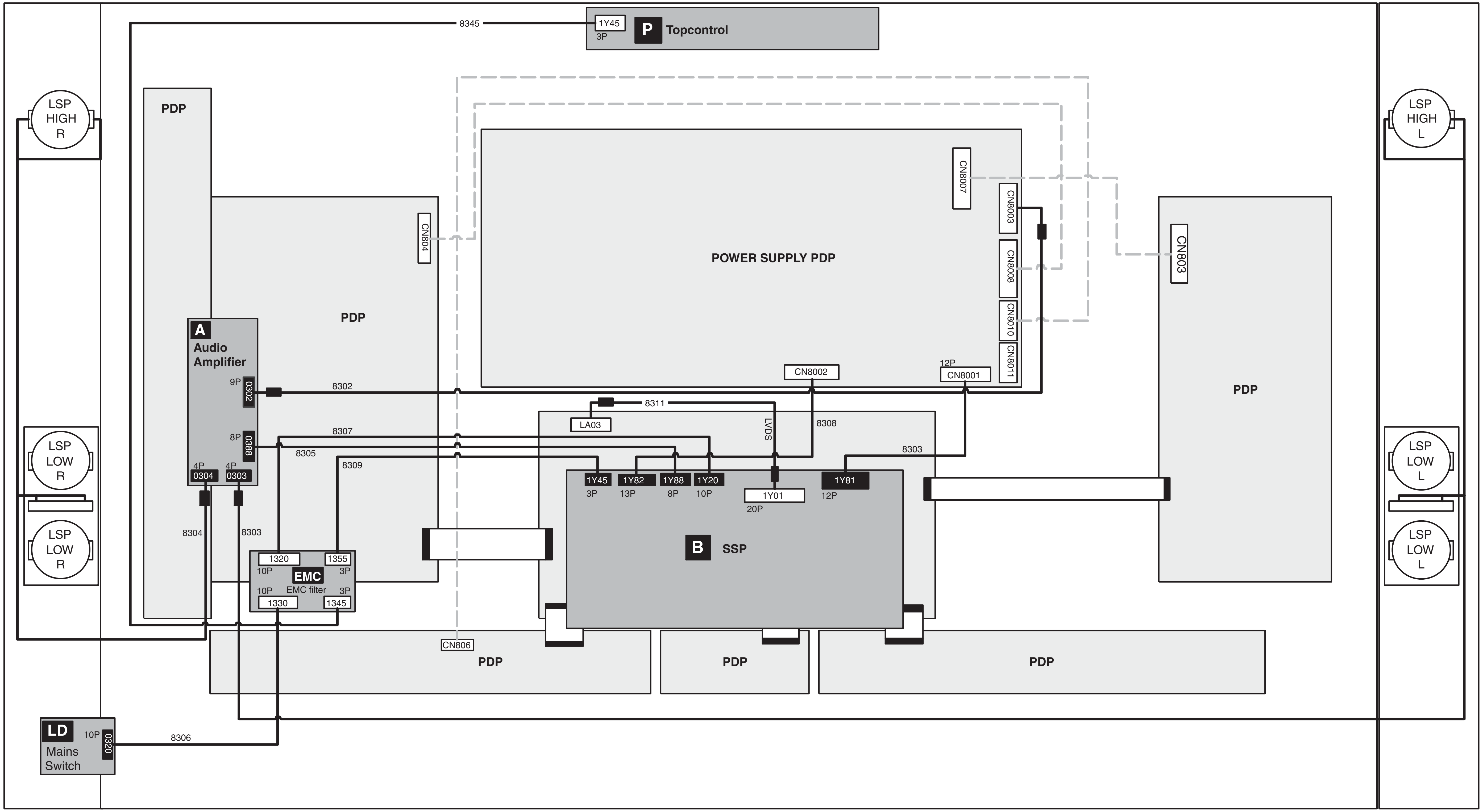
3001	4822 051 20391	390Ω 5% 0.1W
3003	4822 117 13528	200Ω 1% 0.125W 0805
3005	4822 117 11951	2kΩ 1% 0.1W
3009	4822 117 11534	1.1kΩ 1% 0.1W
3011	4822 117 10845	620Ω 1% 0.1W
3999	4822 051 20471	470Ω 5% 0.1W
9001	4822 051 20008	Jumper 0805
9003	4822 051 20008	Jumper 0805
9005	4822 051 20008	Jumper 0805
9006	4822 051 20008	Jumper 0805

11. Revision List

First release

6. Wiring Diagram, Block Diagrams and Overviews

Wiring Diagram


8345
1Y45
3P
P
Topcontrol
LSP
HIGH
R
LSP
HIGH
L
PDP
CN804
POWER SUPPLY PDP
CN8007
CN8003
CN8008
CN8010
CN8011
CN803
PDP
A
Audio
Amplifier
9P
0302
8302
8P
0388
8307
8305
8309
4P
0304
4P
0303
8304
8303
CN8002
12P
CN8001
8311
LA03
LVDS
8308
8303
PDP
LSP
LOW
R
LSP
LOW
R
LSP
LOW
L
LSP
LOW
L
1Y45
3P
1Y82
13P
1Y88
8P
1Y20
10P
1Y01
20P
1Y81
12P
B
SSP
1320
10P
1355
3P
EMC
10P
EMC filter
3P
1330
1345
CN806
PDP
PDP
PDP
LD
10P
0320
Mains
Switch
8306

■ CONNECTOR BOTTOM SIDE

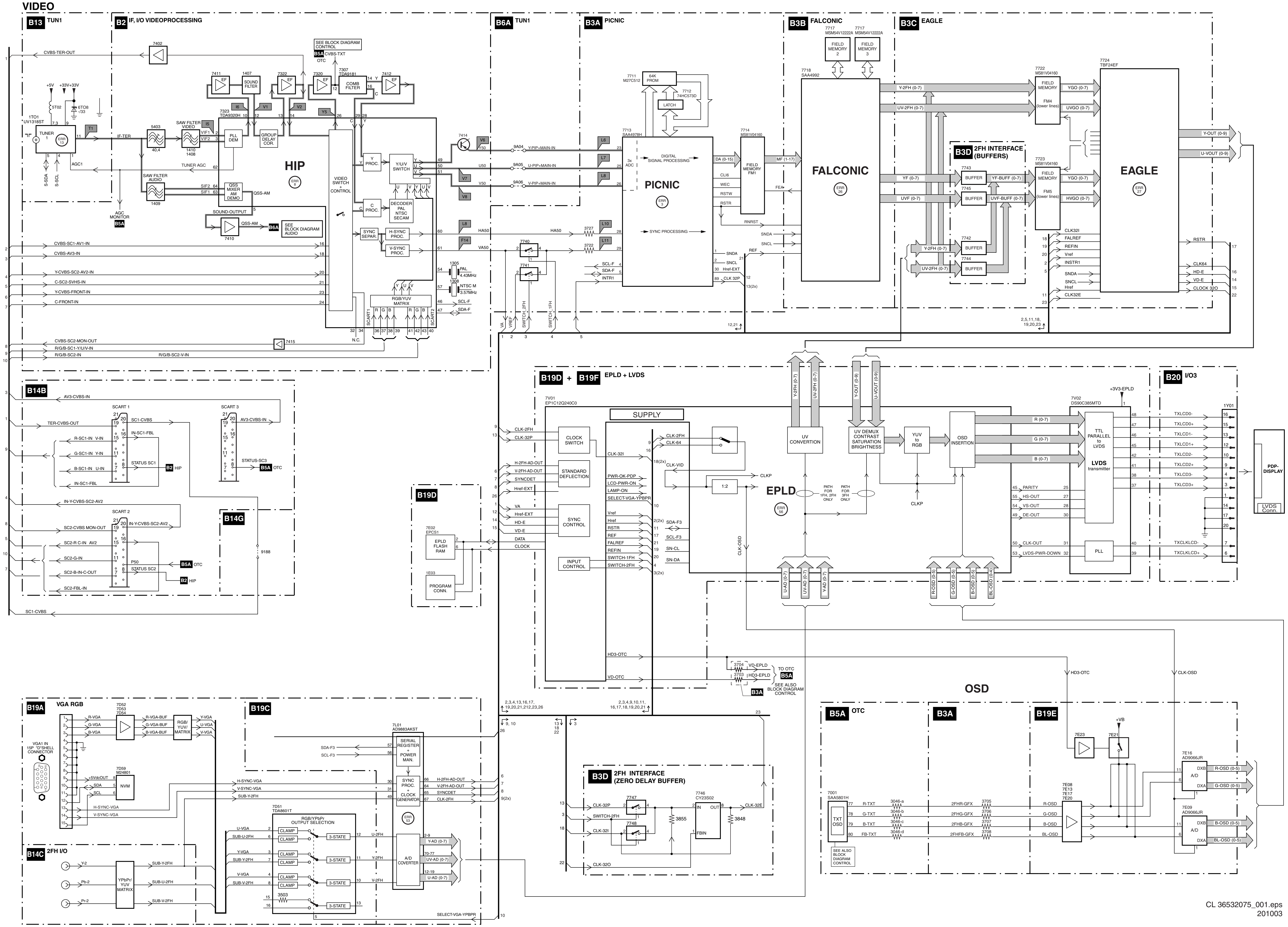
☐ CONNECTOR TOP SIDE

— CABLE PART OF PANEL ASSY

- - CABLE PART OF PDP ASSY

CL 36532075_006.eps
241103

Block Diagram Video


VIDEO
B13 TUN1
B2 IF, I/O VIDEOPROCESSING
B6A TUN1
B3A PICNIC
B3B FALCONIC
B3C EAGLE
B3D 2FH INTERFACE (BUFFERS)
TUNER
1TO1 UV1318ST
CVBS-TER-OUT
IF-TER
AGC1
AGC MONITOR
SAW FILTER VIDEO
SAW FILTER AUDIO
TUNER AGC
PLL DEM
GROUP DELAY COR.
QSS MIXER AM DEMO
QSS-AM
SOUND-OUTPUT
SOUND FILTER
COMB FILTER
SEE BLOCK DIAGRAM CONTROL
CVBS-TXT
OTC
7323 TDA9320H
HIP
VIDEO SWITCH + CONTROL
Y PROC.
Y/U/V SWITCH
C PROC.
DECODER PAL NTSC SECAM
SYNC SEPAR.
H-SYNC PROC.
V-SYNC PROC.
RGB/YUV MATRIX
SEE BLOCK DIAGRAM AUDIO
PAL 4.43MHz
NTSC M 3.57MHz
CVBS-SC1-AV1-IN
CVBS-AV3-IN
Y-CVBS-SC2-AV2-IN
C-SC2-SVHS-IN
Y-CVBS-FRONT-IN
C-FRONT-IN
CVBS-SC2-MON-OUT
R/G/B-SC1-Y/U/V-IN
R/G/B-SC2-IN
R/G/B-SC2-V-IN
Y-PIP+MAIN-IN
U-PIP+MAIN-IN
V-PIP+MAIN-IN
HA50
VA50
7711 M27C512
64K PROM
7712 74HC573D
LATCH
7713 SAA4978H
DIGITAL SIGNAL PROCESSING
SYNC PROCESSING
PICNIC
7714 M581V04160
FIELD MEMORY FM1
7717 MSM54V12222A
FIELD MEMORY 2
FIELD MEMORY 3
7718 SAA4992
FALCONIC
Y-2FH (0-7)
UV-2FH (0-7)
YF (0-7)
UVF (0-7)
BUFFER
YF-BUFF (0-7)
UVF-BUFF (0-7)
7722 MS81V04160
FIELD MEMORY FM4 (lower lines)
7723 MS81V04160
FIELD MEMORY FM5 (lower lines)
YGO (0-7)
UVGO (0-7)
HVGO (0-7)
7724 TBF24EF
EAGLE
Y-OUT (0-9)
U-VOUT (0-9)
RSTR
CLK64
HD-E
VD-E
CLOCK 32O
B14B
SCART 1
SCART 3
SCART 2
STATUS SC1
STATUS SC2
STATUS-SC3
B14G
SC1-CVBS
B19D + B19F EPLD + LVDS
7V01 EP1C12Q240C0
SUPPLY
CLOCK SWITCH
STANDARD DEFLECTION
SYNC CONTROL
INPUT CONTROL
UV CONVERSION
UV DEMUX CONTRAST SATURATION BRIGHTNESS
YUV to RGB
OSD INSERTION
EPLD
7V02 DS90C385MTD
TTL PARALLEL to LVDS
LVDS transmitter
PLL
R (0-7)
G (0-7)
B (0-7)
B20 I/O3
1Y01
PDP-DISPLAY
LVDS Conn.
TXLCD0-
TXLCD0+
TXLCD1-
TXLCD1+
TXLCD2-
TXLCD2+
TXLCD3-
TXLCD3+
TXCLKLCD-
TXCLKLCD+
B19D
7E02 EPCS1
EPLD FLASH RAM
1E03
PROGRAM CONN.
HD3-OTC
VD-OTC
VD-EPLD
HD3-EPLD
TO OTC
SEE ALSO BLOCK DIAGRAM CONTROL
B19A VGA RGB
VGA1 IN 15P "D"SHELL CONNECTOR
7D52 7D53 7D54
RGB/YUV/MATRIX
7D59 M24801
NVM
B19C
7L01 AD9883AKST
SERIAL REGISTER + POWER MAN.
SYNC PROC. + CLOCK GENERATOR
A/D COVERTER
7D51 TDA8601T
RGB/YPbPr OUTPUT SELECTION
CLAMP
3-STATE
SELECT-VGA-YPBPR
B14C 2FH I/O
YPbPr/YUV MATRIX
B3D 2FH INTERFACE (ZERO DELAY BUFFER)
7746 CY23S02
CLK-32E
CLK-32O
OSD
B5A OTC
B3A
B19E
7001 SAA5801H
TXT OSD
R-TXT
G-TXT
B-TXT
FB-TXT
2FHR-GFX
2FHG-GFX
2FHB-GFX
2FHFB-GFX
R-OSD
G-OSD
B-OSD
BL-OSD
7E16 AD9066JR
7E09 AD9066JR
A/D
R-OSD (0-5)
G-OSD (0-5)
B-OSD (0-5)
BL-OSD (0-5)

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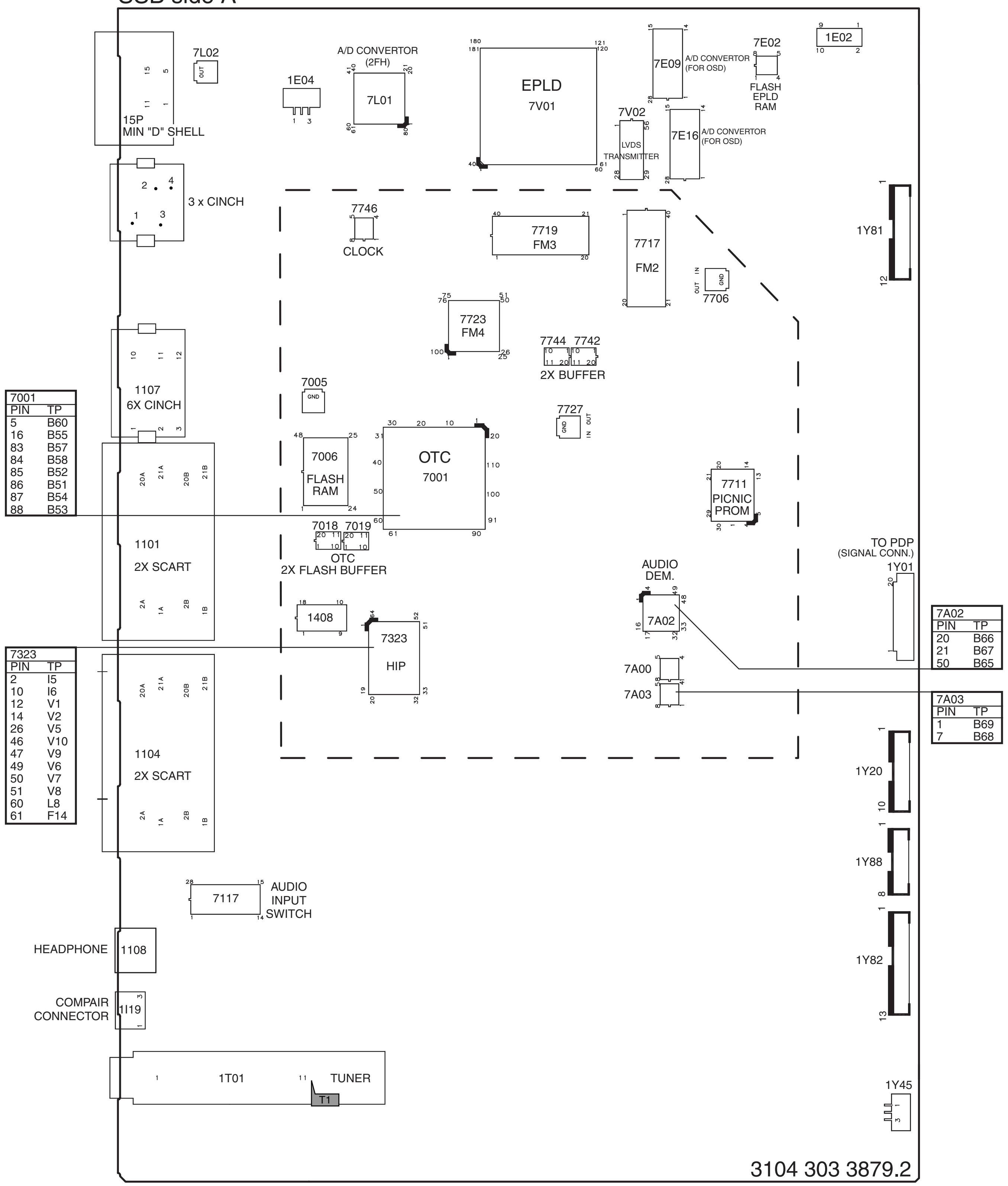
201003

Testpoint Overview Small Signal Board

SSB side A


7L02
A/D CONVERTOR (2FH)
7L01
1E04
EPLD
7V01
7E09
A/D CONVERTOR (FOR OSD)
7E02
FLASH EPLD RAM
1E02
7V02
LVDS TRANSMITTER
7E16
A/D CONVERTOR (FOR OSD)
15P MIN "D" SHELL
3 x CINCH
7746
CLOCK
7719
FM3
7717
FM2
7706
1Y81
7723
FM4
7744 7742
2X BUFFER
1107
6X CINCH
7005
7727
7006
FLASH RAM
OTC
7001
7711
PICNIC PROM
1101
2X SCART
7018 7019
OTC
2X FLASH BUFFER
AUDIO DEM.
7A02
TO PDP (SIGNAL CONN.)
1Y01
1408
7323
HIP
7A00
7A03
1104
2X SCART
1Y20
1Y88
7117
AUDIO INPUT SWITCH
HEADPHONE
1108
1Y82
COMPAIR CONNECTOR
1I19
1T01
TUNER
T1
1Y45
3104 303 3879.2

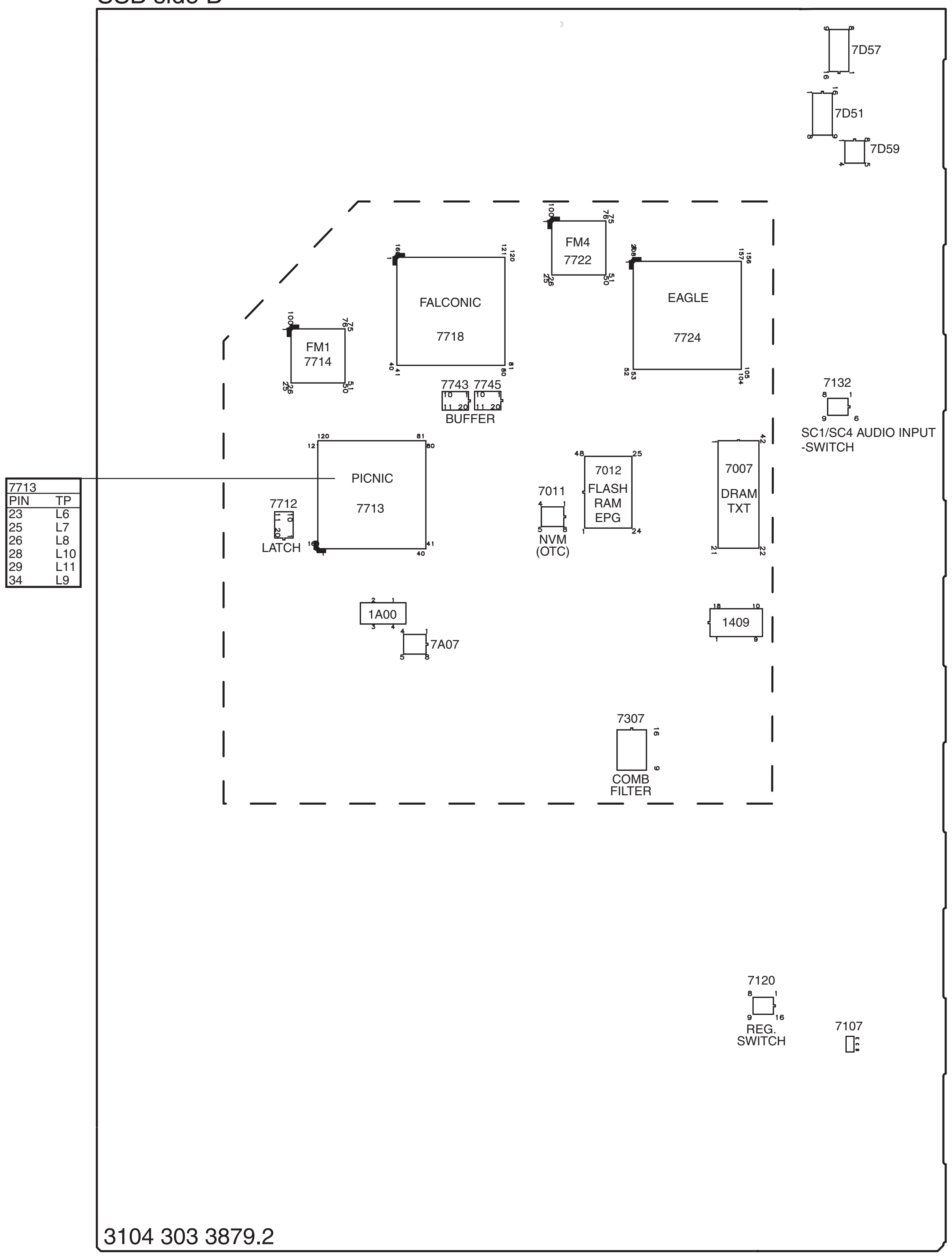
7001	
PIN	TP
5	B60
16	B55
83	B57
84	B58
85	B52
86	B51
87	B54
88	B53

7323	
PIN	TP
2	I5
10	I6
12	V1
14	V2
26	V5
46	V10
47	V9
49	V6
50	V7
51	V8
60	L8
61	F14

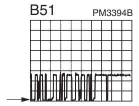
7A02	
PIN	TP
20	B66
21	B67
50	B65

7A03	
PIN	TP
1	B69
7	B68

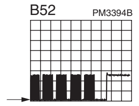
SSB side B


7D57
7D51
7D59
FM4
7722
FALCONIC
7718
EAGLE
7724
FM1
7714
7743 7745
BUFFER
7132
SC1/SC4 AUDIO INPUT -SWITCH
PICNIC
7713
7712
LATCH
7011
NVM (OTC)
7012
FLASH RAM EPG
7007
DRAM TXT
1A00
7A07
1409
7307
COMB FILTER
7120
REG. SWITCH
7107
3104 303 3879.2

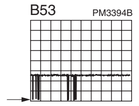
7713	
PIN	TP
23	L6
25	L7
26	L8
28	L10
29	L11
34	L9

B51


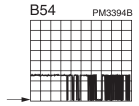
2V / div DC
100us / div

B52


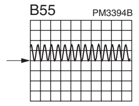
2V / div DC
100us / div

B53


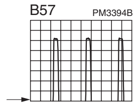
2V / div DC
5ms / div

B54


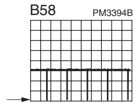
2V / div DC
5ms / div

B55


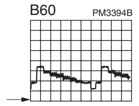
2V / div DC
250ns / div

B57


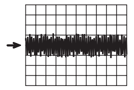
500mV / div AC
10us / div

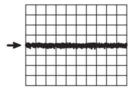
B58


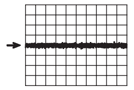
1V / div DC
5ms / div

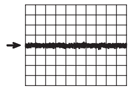
B60


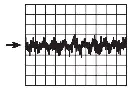
500mV / div DC
10us / div

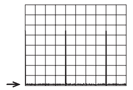
B65

200mV / div AC
10µs / div

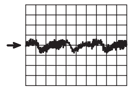
B66

20mV / div AC
1ms / div

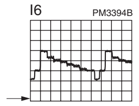
B67

20mV / div AC
1ms / div

B68

20mV / div AC
1ms / div

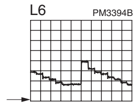
B69

20mV / div AC
1ms / div

F14

1V / div DC
5ms / div

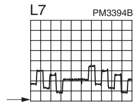
I5

20mV / div AC
10µs / div

I6


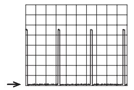
1V / div DC
10us / div

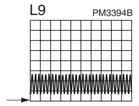
L6


500mV / div DC
10us / div

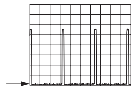
L7


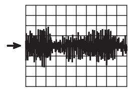
500mV / div DC
10us / div

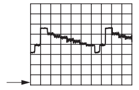
L8

1V / div DC
20us / div

L9


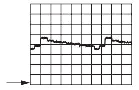
1V / div DC
250ns / div

L10

1V / div DC
20us / div

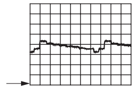
T1

200mV / div AC
10µs / div

V1


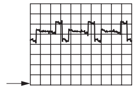
1V / div DC
10us / div

V2


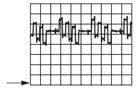
1V / div DC
10us / div

V5


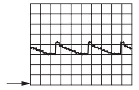
1V / div DC
10us / div

V6


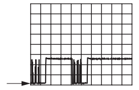
500mV / div DC
20us / div

V7


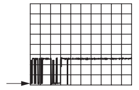
500mV / div DC
20us / div

V8


1V / div DC
20us / div

V9


2V / div DC
200us / div

V10


2V / div DC
200us / div

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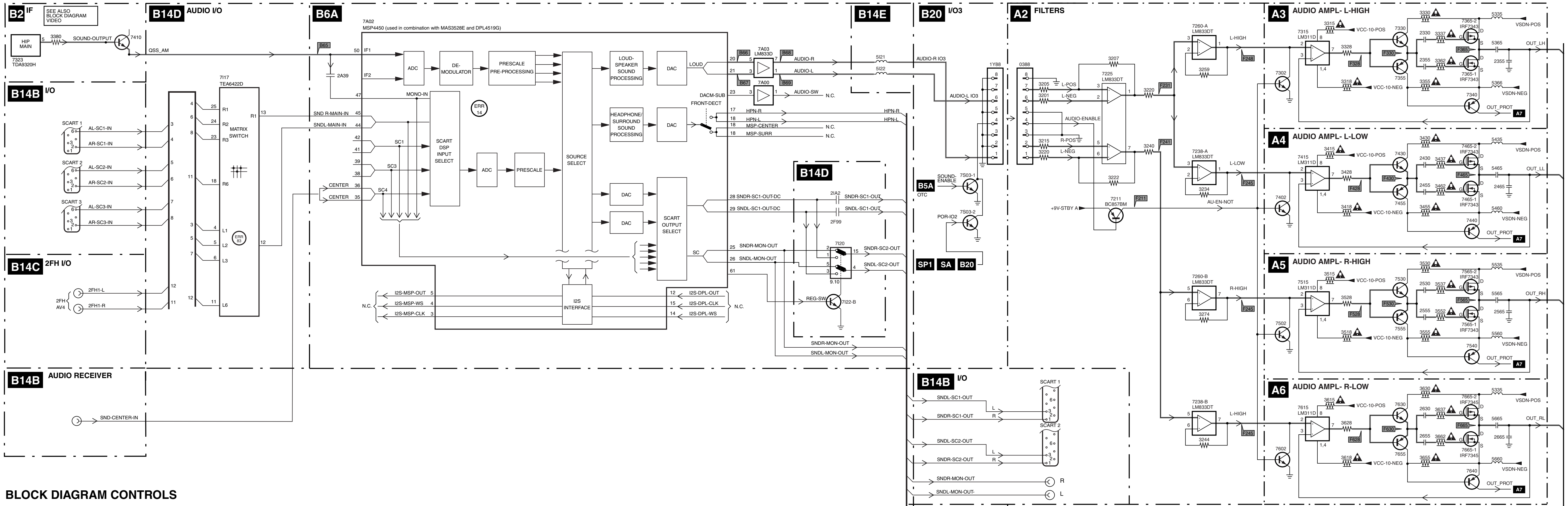
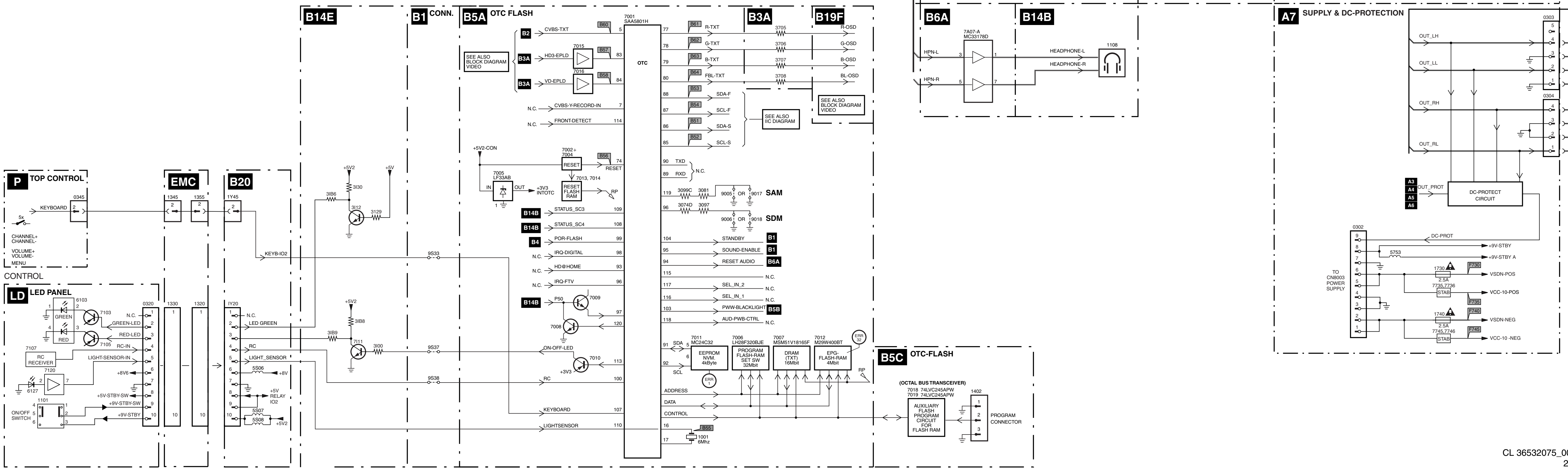
Block Diagram Audio

BLOCK DIAGRAM AUDIO


B2 IF
SEE ALSO BLOCK DIAGRAM VIDEO
HIP MAIN
7323 TDA9320H
SOUND-OUTPUT
7410
B14D AUDIO I/O
QSS_AM
B14B I/O
SCART 1
AL-SC1-IN
AR-SC1-IN
SCART 2
AL-SC2-IN
AR-SC2-IN
SCART 3
AL-SC3-IN
AR-SC3-IN
7I17 TEA6422D
MATRIX SWITCH
B14C 2FH I/O
2FH AV4
2FH1-L
2FH1-R
B6A
7A02 MSP4450 (used in combination with MAS3528E and DPL4519G)
ADC
DE-MODULATOR
PRESCALE PRE-PROCESSING
LOUD-SPEAKER SOUND PROCESSING
HEADPHONE/ SURROUND SOUND PROCESSING
DAC
SCART DSP INPUT SELECT
PRESCALE
SOURCE SELECT
SCART OUTPUT SELECT
I2S INTERFACE
MONO-IN
SNDR-MAIN-IN
SNDL-MAIN-IN
CENTER
SC1
SC3
SC4
LOUD
DACM-SUB
FRONT-DECT
I2S-MSP-OUT
I2S-MSP-WS
I2S-MSP-CLK
I2S-DPL-OUT
I2S-DPL-CLK
I2S-DPL-WS
N.C.
7A03 LM833D
7A00
AUDIO-R
AUDIO-L
AUDIO-SW
HPN-R
HPN-L
MSP-CENTER
MSP-SURR
SNDR-SC1-OUT-DC
SNDL-SC1-OUT-DC
SNDR-MON-OUT
SNDL-MON-OUT
B14D
SNDR-SC1-OUT
SNDL-SC1-OUT
SNDR-SC2-OUT
SNDL-SC2-OUT
REG-SW
7I22-B
B14E
B20 I/O3
AUDIO-R IO3
AUDIO-L IO3
B5A OTC
SOUND-ENABLE
POR-IO2
7S03-1
7S03-2
SP1 SA B20
A2 FILTERS
L-POS
L-NEG
R-POS
R-NEG
AUDIO-ENABLE
7225 LM833DT
7211 BC857BM
+9V-STBY A
AU-EN-NOT
7260-A LM833DT
7238-A LM833DT
7260-B LM833DT
7238-B LM833DT
L-HIGH
L-LOW
R-HIGH
A3 AUDIO AMPL- L-HIGH
A4 AUDIO AMPL- L-LOW
A5 AUDIO AMPL- R-HIGH
A6 AUDIO AMPL- R-LOW
LM311D
IRF7343
IRF7345
VCC-10-POS
VCC-10-NEG
VSDN-POS
VSDN-NEG
OUT_LH
OUT_LL
OUT_RH
OUT_RL
OUT_PROT
A7
B14B AUDIO RECEIVER
SND-CENTER-IN

BLOCK DIAGRAM CONTROLS


B14E
B1 CONN.
B5A OTC FLASH
B3A
B19F
7001 SAA5801H
OTC
CVBS-TXT
HD3-EPLD
VD-EPLD
SEE ALSO BLOCK DIAGRAM VIDEO
CVBS-Y-RECORD-IN
FRONT-DETECT
R-TXT
G-TXT
B-TXT
FBL-TXT
R-OSD
G-OSD
B-OSD
BL-OSD
SDA-F
SCL-F
SDA-S
SCL-S
SEE ALSO IIC DIAGRAM
+5V2-CON
7005 LF33AB
7002÷7004
RESET
RESET FLASH RAM
STATUS_SC3
STATUS_SC4
POR-FLASH
IRQ-DIGITAL
HD@HOME
IRQ-FTV
TXD
RXD
SAM
SDM
STANDBY
SOUND-ENABLE
RESET AUDIO
SEL_IN_2
SEL_IN_1
PWW-BLACKLIGHT
AUD-PWB-CTRL
7011 MC24C32 EEPROM NVM. 4kByte
7006 LH28F320BJE PROGRAM FLASH-RAM SET SW 32Mbit
7007 MSM51V18165F DRAM (TXT) 16Mbit
7012 M29W400BT EPG-FLASH-RAM 4Mbit
ADDRESS
DATA
CONTROL
1001 6Mhz
ON-OFF-LED
RC
KEYBOARD
LIGHTSENSOR
P TOP CONTROL
KEYBOARD
CHANNEL+
CHANNEL-
VOLUME+
VOLUME-
MENU
CONTROL
EMC
B20
KEYB-IO2
LD LED PANEL
GREEN
RED
GREEN-LED
RED-LED
RC-IN
LIGHT-SENSOR-IN
RC RECEIVER
ON/OFF SWITCH
+5V-STBY-SW
+9V-STBY-SW
+9V-STBY
LED GREEN
LIGHT_SENSOR
+5V RELAY IO2
B5C OTC-FLASH
(OCTAL BUS TRANSCEIVER) 7018 74LVC245APW 7019 74LVC245APW
AUXILIARY FLASH PROGRAM CIRCUIT FOR FLASH RAM
PROGRAM CONNECTOR
B6A
7A07-A MC33178D
HPN-L
HPN-R
B14B
HEADPHONE-L
HEADPHONE-R
B14B I/O
SCART 1
SCART 2
SNDR-MON-OUT
SNDL-MON-OUT
A7 SUPPLY & DC-PROTECTION
L-HIGH
L-LOW
R-HIGH
R-LOW
8 Ω
DC-PROTECT CIRCUIT
TO CN8003 POWER SUPPLY
DC-PROT
+9V-STBY
+9V-STBY A
VSDN-POS
VCC-10-POS
VSDN-NEG
VCC-10-NEG

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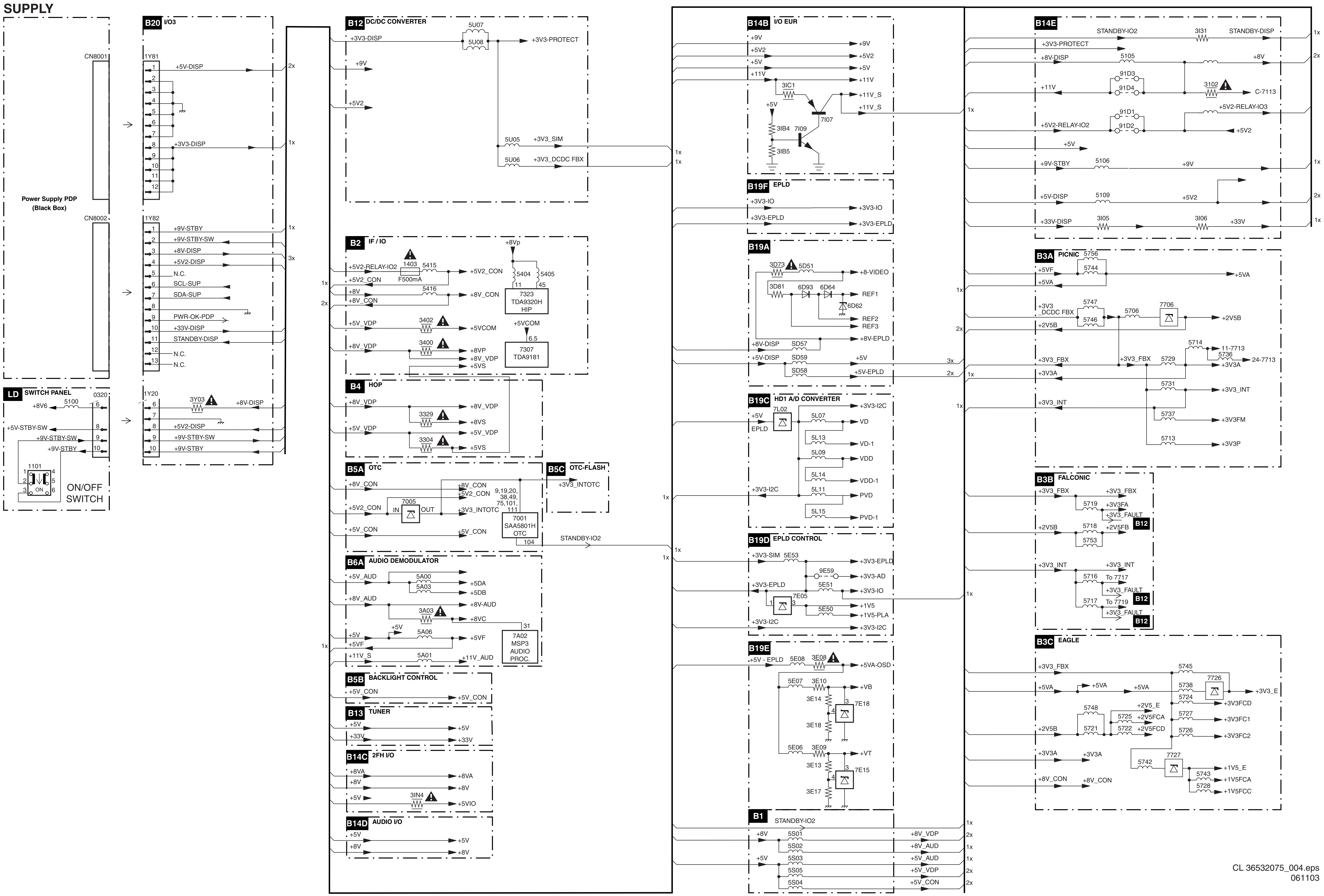
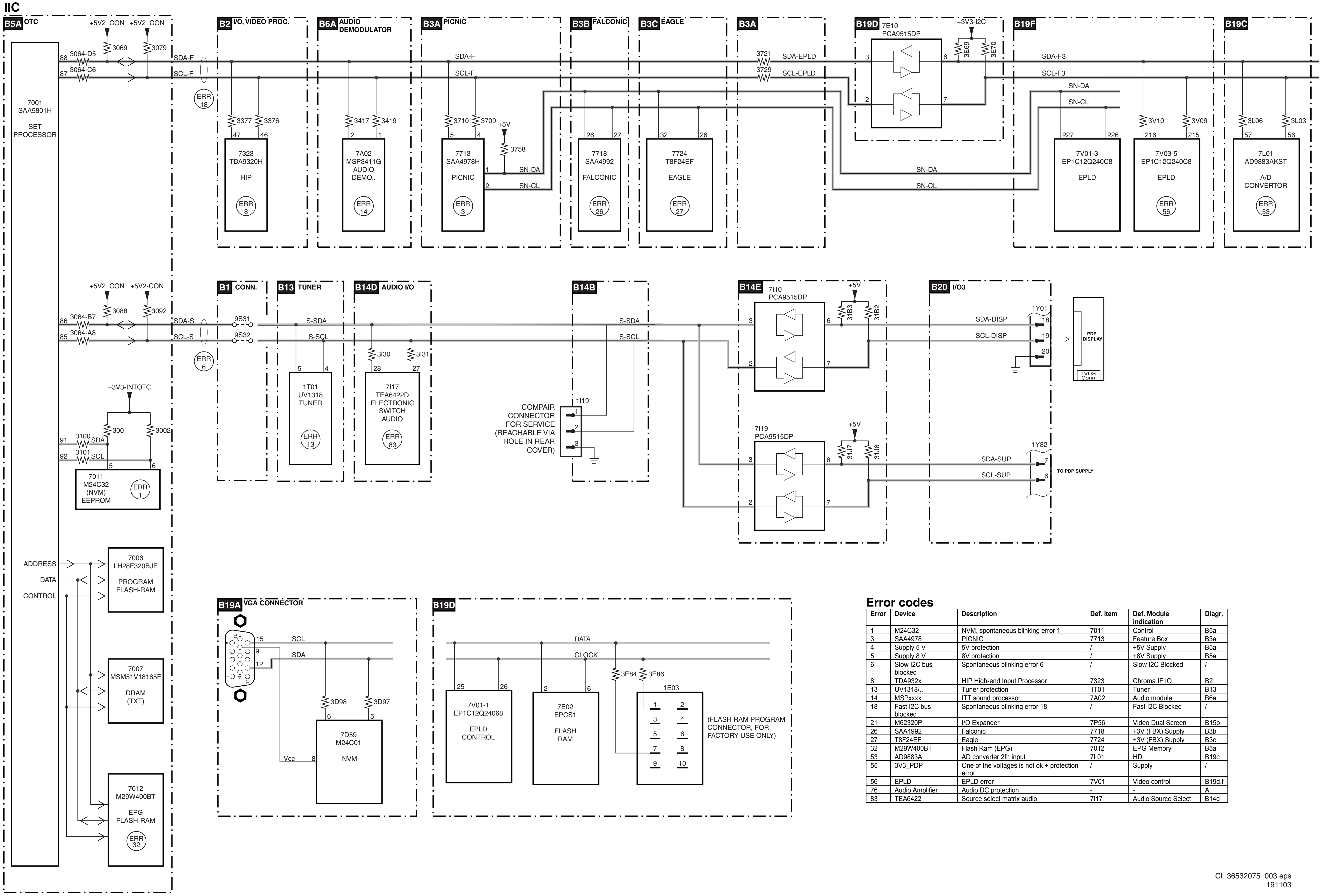
Supply Lines Overview


SUPPLY
Power Supply PDP
(Black Box)
CN8001
CN8002
B20 I/O3
1Y81
+5V-DISP
+3V3-DISP
1Y82
+9V-STBY
+9V-STBY-SW
+8V-DISP
+5V2-DISP
N.C.
SCL-SUP
SDA-SUP
PWR-OK-PDP
+33V-DISP
STANDBY-DISP
LD SWITCH PANEL
0320
5100
+8V6
+5V-STBY-SW
+9V-STBY-SW
+9V-STBY
1101
ON
ON/OFF
SWITCH
1Y20
3Y03
+8V-DISP
B12 DC/DC CONVERTER
5U07
5U08
+3V3-PROTECT
5U05
+3V3_SIM
5U06
+3V3_DCDC FBX
B2 IF / IO
+5V2-RELAY-IO2
1403
F500mA
5415
+5V2_CON
5416
+8V_CON
+8Vp
5404
5405
7323
TDA9320H
HIP
3402
+5VCOM
3400
+8VP
+8V_VDP
+5VS
7307
TDA9181
B4 HOP
3329
+8VS
3304
+5V_VDP
B5A OTC
7005
IN
OUT
+3V3_INTOTC
7001
SAA5801H
OTC
STANDBY-IO2
B5C OTC-FLASH
B6A AUDIO DEMODULATOR
+5V_AUD
5A00
5A03
+5DA
+5DB
+8V_AUD
+8V-AUD
3A03
+8VC
5A06
+5VF
+11V_S
5A01
+11V_AUD
7A02
MSP3
AUDIO
PROC.
B5B BACKLIGHT CONTROL
B13 TUNER
+33V
B14C 2FH I/O
+8VA
3IN4
+5VIO
B14D AUDIO I/O
B14B I/O EUR
+9V
+5V2
+5V
+11V
3IC1
7I07
3IB4
7I09
3IB5
+11V_S
B19F EPLD
+3V3-IO
+3V3-EPLD
B19A
3D73
5D51
+8-VIDEO
3D81
6D93
6D64
REF1
6D62
REF2
REF3
+8V-EPLD
5D57
5D59
5D58
+5V-EPLD
B19C HD1 A/D CONVERTER
7L02
+3V3-I2C
5L07
VD
5L13
VD-1
5L09
VDD
5L14
VDD-1
5L11
PVD
5L15
PVD-1
B19D EPLD CONTROL
+3V3-SIM
5E53
9E59
+3V3-AD
5E51
7E05
5E50
+1V5
+1V5-PLA
B19E
+5V - EPLD
5E08
3E08
+5VA-OSD
5E07
3E10
+VB
3E14
7E18
3E18
5E06
3E09
+VT
3E13
7E15
3E17
B1
STANDBY-IO2
5S01
+8V_VDP
5S02
+8V_AUD
5S03
+5V_AUD
5S05
+5V_VDP
5S04
+5V_CON
B14E
STANDBY-IO2
3I31
STANDBY-DISP
+8V-DISP
5105
+8V
91D3
91D4
3102
C-7113
91D1
91D2
+5V2-RELAY-IO3
+5V2-RELAY-IO2
5106
5109
3I05
3I06
+33V-DISP
B3A PICNIC
5756
5744
+5VF
+5VA
+3V3_DCDC FBX
5747
5746
5706
7706
+2V5B
5714
11-7713
5736
24-7713
+3V3_FBX
5729
+3V3A
5731
+3V3_INT
5737
+3V3FM
5713
+3V3P
B3B FALCONIC
5719
+3V3FA
+3V3_FAULT
B12
5718
+2V5FB
5753
5716
To 7717
5717
To 7719
B3C EAGLE
5745
7726
5738
+3V3_E
5724
+3V3FCD
5748
+2V5_E
5725
+2V5FCA
5727
+3V3FC1
5721
5722
+2V5FCD
5726
+3V3FC2
7727
5742
+1V5_E
5743
+1V5FCA
5728
+1V5FCC
+8V_CON
1x
2x
3x
CL 36532075_004.eps
061103

I2C IC's overview


IIC
B5A OTC
+5V2_CON +5V2_CON
3064-D5
3064-C6
3069
3079
88
87
SDA-F
SCL-F
ERR 18
7001
SAA5801H
SET
PROCESSOR
B2 I/O, VIDEO PROC.
3377 3376
47 46
7323
TDA9320H
HIP
ERR 8
B6A AUDIO DEMODULATOR
3417 3419
2 1
7A02
MSP3411G
AUDIO
DEMO..
ERR 14
B3A PICNIC
SDA-F
SCL-F
3710 3709
+5V
3758
5 4
7713
SAA4978H
PICNIC
ERR 3
1 SN-DA
2 SN-CL
B3B FALCONIC
26 27
7718
SAA4992
FALCONIC
ERR 26
B3C EAGLE
32 26
7724
T8F24EF
EAGLE
ERR 27
B3A
3721 SDA-EPLD
3729 SCL-EPLD
B19D 7E10
PCA9515DP
+3V3-I2C
3E69
3E70
3 6
2 7
SN-DA
SN-CL
B19F
SDA-F3
SCL-F3
SN-DA
SN-CL
227 226
7V01-3
EP1C12Q240C8
EPLD
3V10 3V09
216 215
7V03-5
EP1C12Q240C8
EPLD
ERR 56
B19C
3L06 3L03
57 56
7L01
AD9883AKST
A/D
CONVERTOR
ERR 53
+5V2_CON +5V2-CON
3064-B7
3064-A8
3088
3092
86
85
SDA-S
SCL-S
ERR 6
B1 CONN.
9S31
9S32
B13 TUNER
S-SDA
S-SCL
5 4
1T01
UV1318
TUNER
ERR 13
B14D AUDIO I/O
3I30 3I31
28 27
7I17
TEA6422D
ELECTRONIC
SWITCH
AUDIO
ERR 83
B14B
S-SDA
S-SCL
1I19
COMPAIR
CONNECTOR
FOR SERVICE
(REACHABLE VIA
HOLE IN REAR
COVER)
1
2
3
B14E
7I10
PCA9515DP
+5V
31B3
31B2
3 6
2 7
7I19
PCA9515DP
+5V
31J7
31J8
3 6
2 7
B20 I/O3
1Y01
SDA-DISP 18
SCL-DISP 19
20
PDP-
DISPLAY
LVDS
Conn.
1Y82
SDA-SUP 7
SCL-SUP 6
TO PDP SUPPLY
+3V3-INTOTC
3001
3002
91 3100 SDA
92 3101 SCL
5 6
7011
M24C32
(NVM)
EEPROM
ERR 1
ADDRESS
DATA
CONTROL
7006
LH28F320BJE
PROGRAM
FLASH-RAM
7007
MSM51V18165F
DRAM
(TXT)
7012
M29W400BT
EPG
FLASH-RAM
ERR 32
B19A VGA CONNECTOR
15 SCL
9
12 SDA
3D98 3D97
6 5
7D59
M24C01
NVM
Vcc 8
B19D
DATA
CLOCK
25 26
7V01-1
EP1C12Q24068
EPLD
CONTROL
2 6
7E02
EPCS1
FLASH
RAM
3E84 3E86
1E03
1 2
3 4
5 6
7 8
9 10
(FLASH RAM PROGRAM
CONNECTOR, FOR
FACTORY USE ONLY)

Error codes

Error	Device	Description	Def. item	Def. Module indication	Diagr.
1	M24C32	NVM, spontaneous blinking error 1	7011	Control	B5a
3	SAA4978	PICNIC	7713	Feature Box	B3a
4	Supply 5 V	5V protection	/	+5V Supply	B5a
5	Supply 8 V	8V protection	/	+8V Supply	B5a
6	Slow I2C bus blocked	Spontaneous blinking error 6	/	Slow I2C Blocked	/
8	TDA932x	HIP High-end Input Processor	7323	Chroma IF IO	B2
13	UV1318/...	Tuner protection	1T01	Tuner	B13
14	MSPxxxx	ITT sound processor	7A02	Audio module	B6a
18	Fast I2C bus blocked	Spontaneous blinking error 18	/	Fast I2C Blocked	/
21	M62320P	I/O Expander	7P56	Video Dual Screen	B15b
26	SAA4992	Falconic	7718	+3V (FBX) Supply	B3b
27	T8F24EF	Eagle	7724	+3V (FBX) Supply	B3c
32	M29W400BT	Flash Ram (EPG)	7012	EPG Memory	B5a
53	AD9883A	AD converter 2fh input	7L01	HD	B19c
55	3V3_PDP	One of the voltages is not ok + protection error	/	Supply	/
56	EPLD	EPLD error	7V01	Video control	B19d,f
76	Audio Amplifier	Audio DC protection	-	-	A
83	TEA6422	Source select matrix audio	7I17	Audio Source Select	B14d

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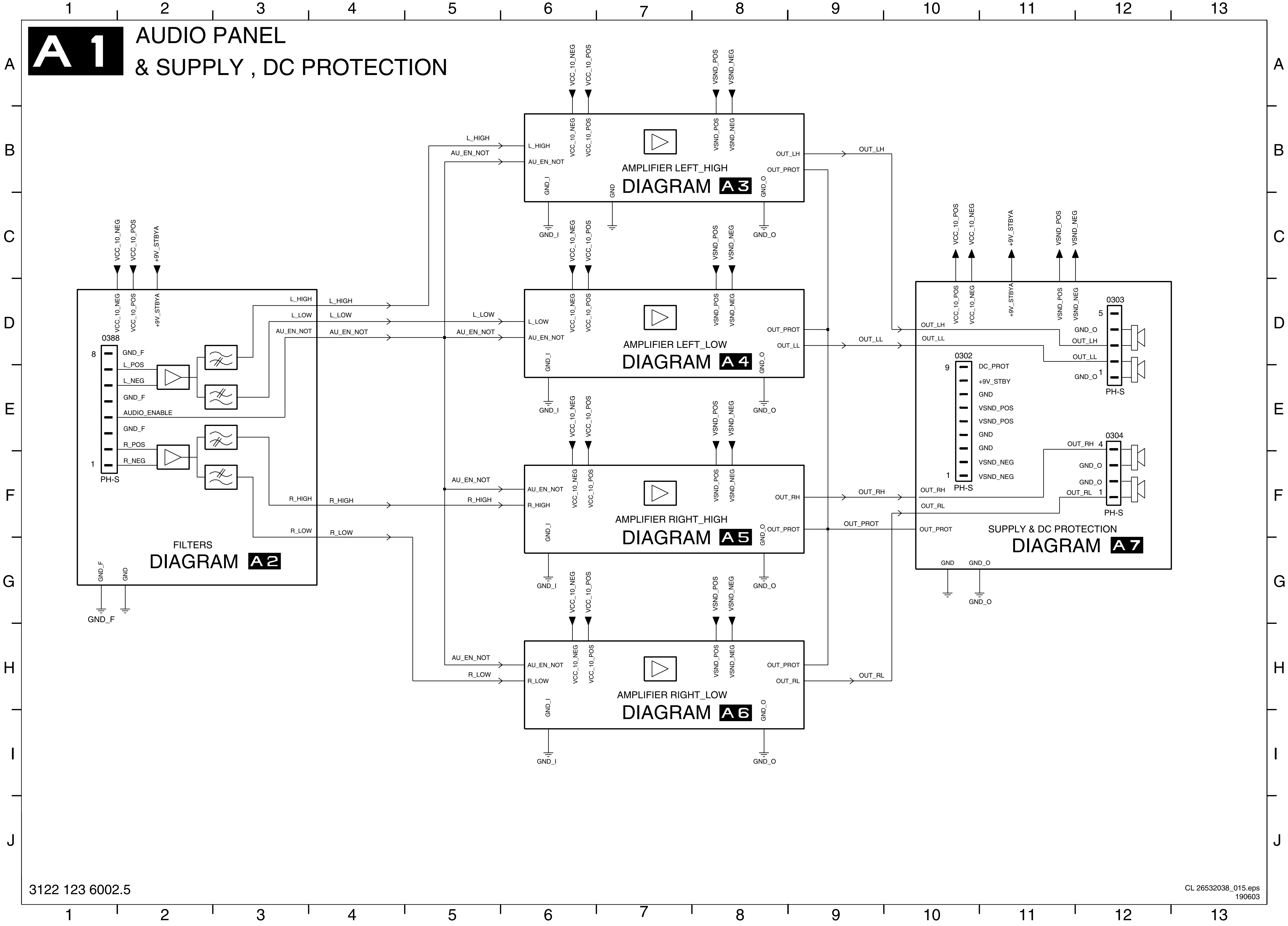
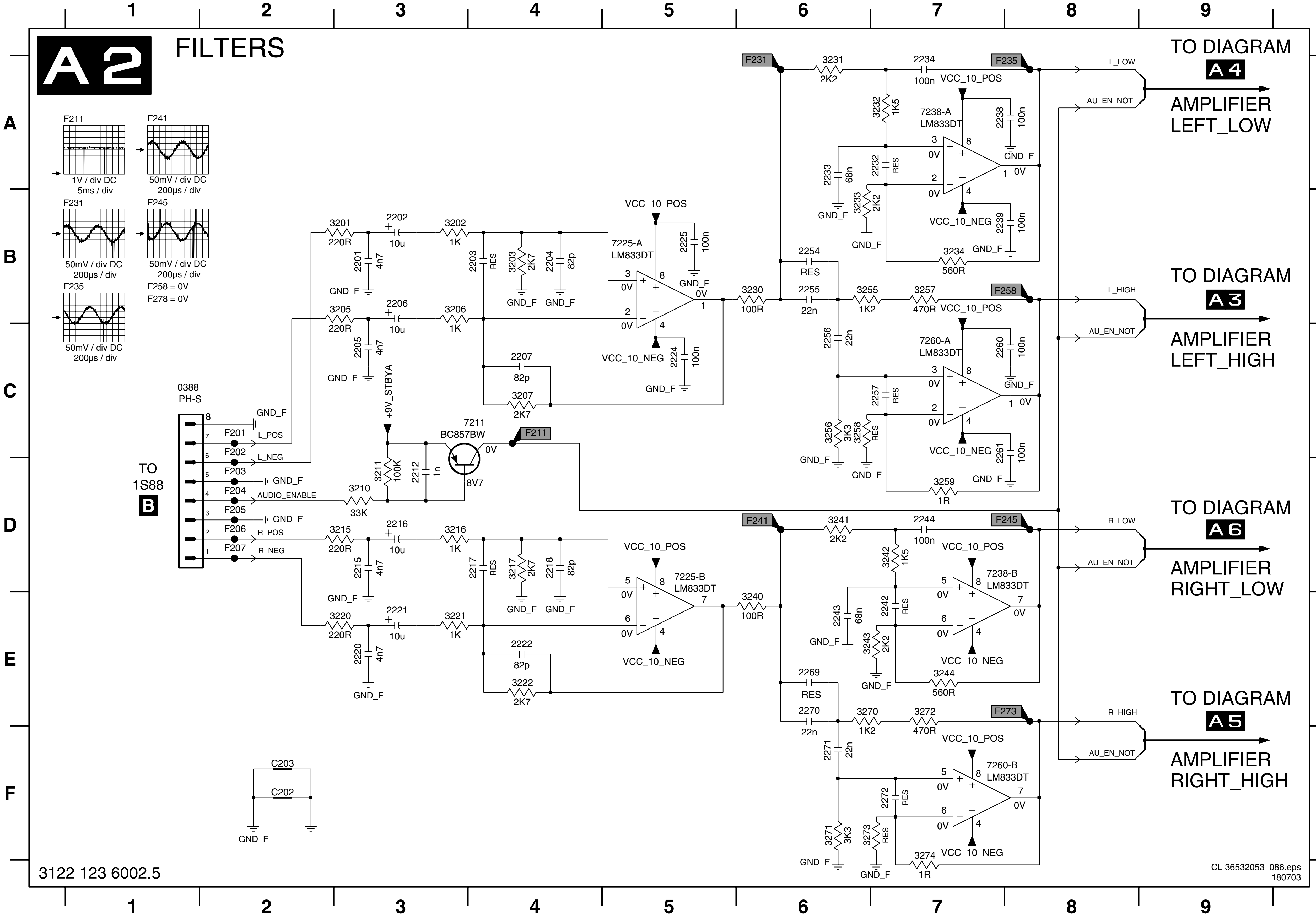
7. Circuit Diagrams and PWB Layouts

Audio Panel and Supply, DC Protection


A 1
AUDIO PANEL
& SUPPLY , DC PROTECTION
FILTERS
DIAGRAM A2
AMPLIFIER LEFT_HIGH
DIAGRAM A3
AMPLIFIER LEFT_LOW
DIAGRAM A4
AMPLIFIER RIGHT_HIGH
DIAGRAM A5
AMPLIFIER RIGHT_LOW
DIAGRAM A6
SUPPLY & DC PROTECTION
DIAGRAM A7
VCC_10_NEG
VCC_10_POS
+9V_STBYA
VSND_POS
VSND_NEG
0388
GND_F
L_POS
L_NEG
AUDIO_ENABLE
R_POS
R_NEG
PH-S
L_HIGH
L_LOW
AU_EN_NOT
R_HIGH
R_LOW
GND_I
GND
GND_O
OUT_LH
OUT_LL
OUT_RH
OUT_RL
OUT_PROT
0302
DC_PROT
+9V_STBY
0303
0304
3122 123 6002.5
CL 26532038_015.eps
190603

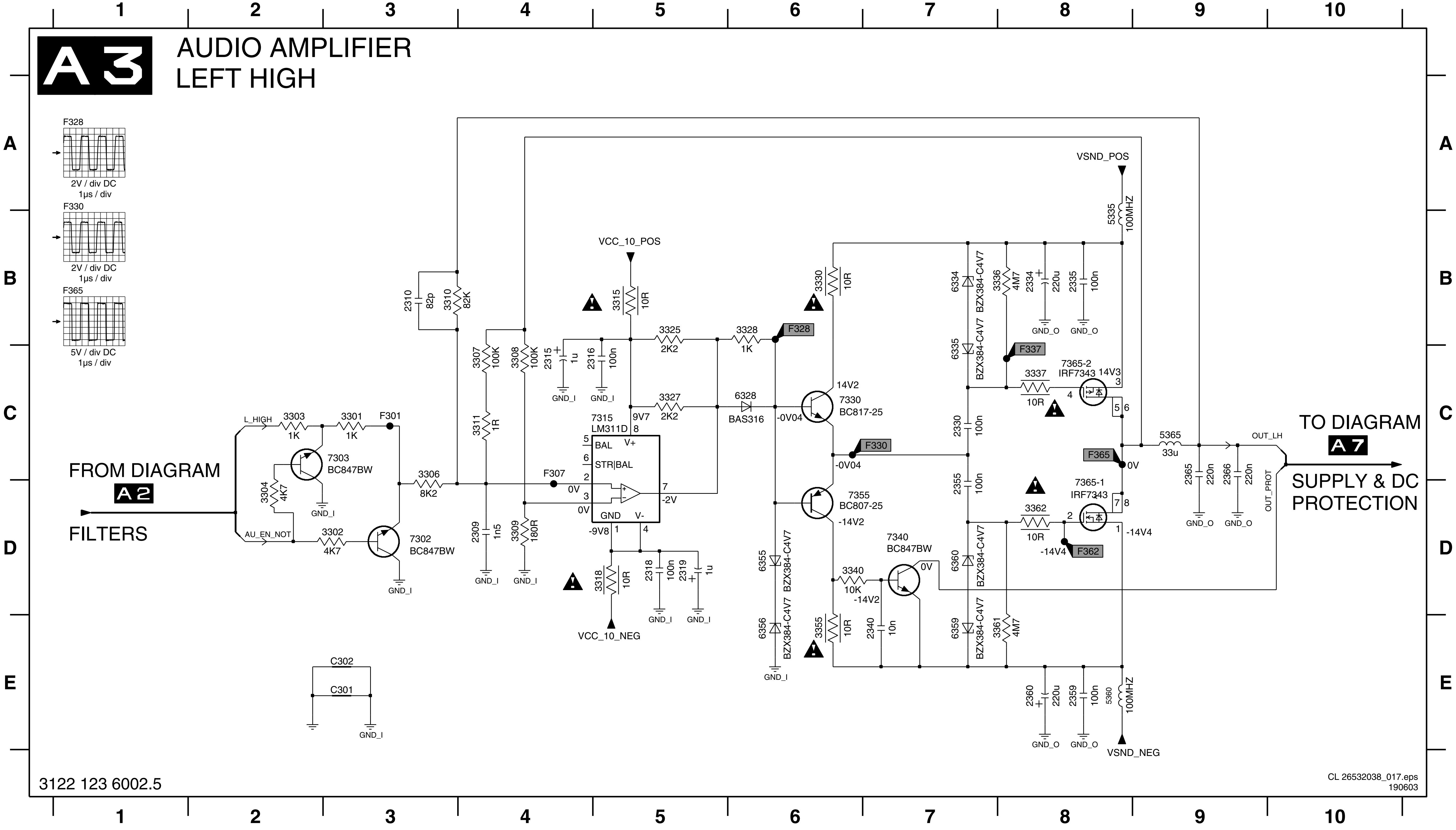
Filters


A2
FILTERS
1 2 3 4 5 6 7 8 9
A B C D E F
F211
1V / div DC
5ms / div
F241
50mV / div DC
200µs / div
F231
50mV / div DC
200µs / div
F245
50mV / div DC
200µs / div
F235
50mV / div DC
200µs / div
F258 = 0V
F278 = 0V
0388
PH-S
TO
1S88
B
F201
F202
F203
F204
F205
F206
F207
GND_F
L_POS
L_NEG
AUDIO_ENABLE
R_POS
R_NEG
3201
220R
2201
4n7
2202
10u
3202
1K
2203
RES
3203
2K7
2204
82p
3205
220R
2205
4n7
2206
10u
3206
1K
2207
82p
3207
2K7
VCC_10_POS
VCC_10_NEG
2225
100n
2224
100n
7225-A
LM833DT
0V
+9V_STBYA
7211
BC857BW
F211
8V7
3211
100K
2212
1n
3210
33K
3215
220R
2215
4n7
2216
10u
3216
1K
2217
RES
3217
2K7
2218
82p
3220
220R
2220
4n7
2221
10u
3221
1K
2222
82p
3222
2K7
7225-B
LM833DT
3230
100R
3240
100R
F231
3231
2K2
2234
100n
F235
3232
1K5
7238-A
LM833DT
2238
100n
2233
68n
2232
RES
3233
2K2
2239
100n
3234
560R
2254
RES
2255
22n
3255
1K2
3257
470R
F258
2256
22n
7260-A
LM833DT
2260
100n
2257
RES
3256
3K3
3258
RES
2261
100n
3259
1R
F241
3241
2K2
2244
100n
F245
3242
1K5
7238-B
LM833DT
2243
68n
2242
RES
3243
2K2
3244
560R
2269
RES
2270
22n
3270
1K2
3272
470R
F273
2271
22n
7260-B
LM833DT
2272
RES
3271
3K3
3273
RES
3274
1R
L_LOW
AU_EN_NOT
L_HIGH
R_LOW
R_HIGH
TO DIAGRAM
A4
AMPLIFIER
LEFT_LOW
TO DIAGRAM
A3
AMPLIFIER
LEFT_HIGH
TO DIAGRAM
A6
AMPLIFIER
RIGHT_LOW
TO DIAGRAM
A5
AMPLIFIER
RIGHT_HIGH
C203
C202
3122 123 6002.5
CL 36532053_086.eps
180703

0388	C1
2201	B3
2202	B3
2203	B4
2204	B4
2205	C3
2206	B3
2207	C4
2212	D3
2215	D3
2216	D3
2217	D4
2218	D4
2220	E3
2221	E3
2222	E4
2224	C5
2225	B5
2232	A7
2233	A6
2234	A7
2238	A7
2239	B7
2242	E7
2243	E6
2244	D7
2254	B6
2255	B6
2256	C6
2257	C7
2260	C7
2261	C7
2269	E6
2270	E6
2271	F6
2272	F7
3201	B3
3202	B3
3203	B4
3205	B3
3206	B3
3207	C4
3210	D3
3211	D3
3215	D3
3216	D3
3217	D4
3220	E3
3221	E3
3222	E4
3230	B6
3231	A6
3232	A7
3233	B6
3234	B7
3240	E6
3241	D6
3242	D7
3243	E6
3244	E7
3255	B6
3256	C6
3257	B7
3258	C6
3259	D7
3270	E6
3271	F6
3272	E7
3273	F6
3274	F7
7211	C4
7225-A	B5
7225-B	D5
7238-A	A7
7238-B	D7
7260-A	C7
7260-B	F7
C202	F2
C203	F2
F201	C2
F202	C2
F203	D2
F204	D2
F205	D2
F206	D2
F207	D2
F211	C4
F231	A6
F235	A8
F241	D6
F245	D8
F258	B8
F273	E8

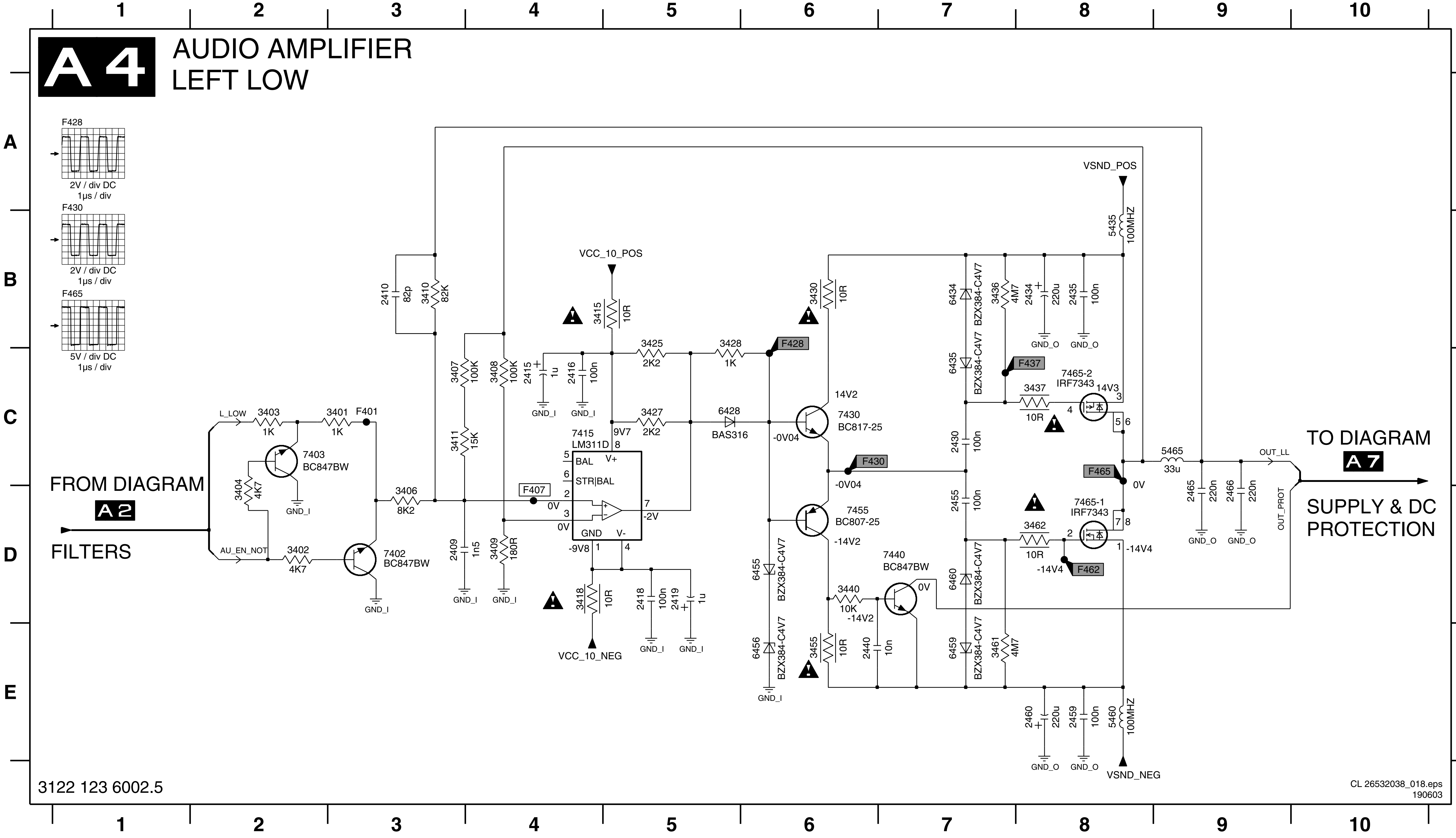
Audio Amplifier Left High

2309 D4
2310 B3
2315 C4
2316 C5
2318 D5
2319 D5
2330 C7
2334 B8
2335 B8
2340 E7
2355 D7
2359 E8
2360 E8
2365 C9
2366 C9
3301 C3
3302 D3
3303 C2
3304 D2
3306 C3
3307 C4
3308 C4
3309 D4
3310 B3
3311 C4
3315 B5
3318 D5
3325 B5
3327 C5
3328 B6
3330 B6
3336 B8
3337 C8
3340 D6
3355 E6
3361 E8
3362 D8
5335 B8
5360 E8
5365 C9
6328 C6
6334 B7
6335 C7
6355 D6
6356 E6
6359 E7
6360 D7
7302 D3
7303 C3
7315 C4
7330 C6
7340 D7
7355 D6
7365-1 D8
7365-2 C8
C301 E3
C302 E3
F301 C3
F307 C4
F328 B6
F330 C7
F337 C8
F362 D8
F365 C8


1 2 3 4 5 6 7 8 9 10
A B C D E
A3
AUDIO AMPLIFIER
LEFT HIGH
F328
2V / div DC
1µs / div
F330
2V / div DC
1µs / div
F365
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
L_HIGH
AU_EN_NOT
3303
1K
3301
1K
F301
7303
BC847BW
3304
4K7
GND_I
3302
4K7
7302
BC847BW
3306
8K2
2310
82p
3310
82K
3307
100K
3308
100K
3311
1R
2309
1n5
3309
180R
VCC_10_POS
3315
10R
2315
1u
2316
100n
3325
2K2
3327
2K2
7315
LM311D
9V7
BAL
STR|BAL
V+
GND
V-
F307
0V
-2V
-9V8
3318
10R
2318
100n
2319
1u
VCC_10_NEG
3328
1K
F328
6328
BAS316
-0V04
3330
10R
14V2
7330
BC817-25
F330
-0V04
7355
BC807-25
-14V2
6355
BZX384-C4V7
6356
BZX384-C4V7
3340
10K
-14V2
7340
BC847BW
0V
3355
10R
2340
10n
6334
BZX384-C4V7
6335
BZX384-C4V7
3336
4M7
2334
220u
2335
100n
GND_O
F337
3337
10R
7365-2
IRF7343
14V3
2330
100n
2355
100n
F365
0V
7365-1
IRF7343
3362
10R
-14V4
F362
6360
BZX384-C4V7
6359
BZX384-C4V7
3361
4M7
2360
220u
2359
100n
5360
100MHZ
VSND_NEG
VSND_POS
5335
100MHZ
5365
33u
2365
220n
2366
220n
OUT_LH
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
C302
C301
3122 123 6002.5
CL 26532038_017.eps
190603

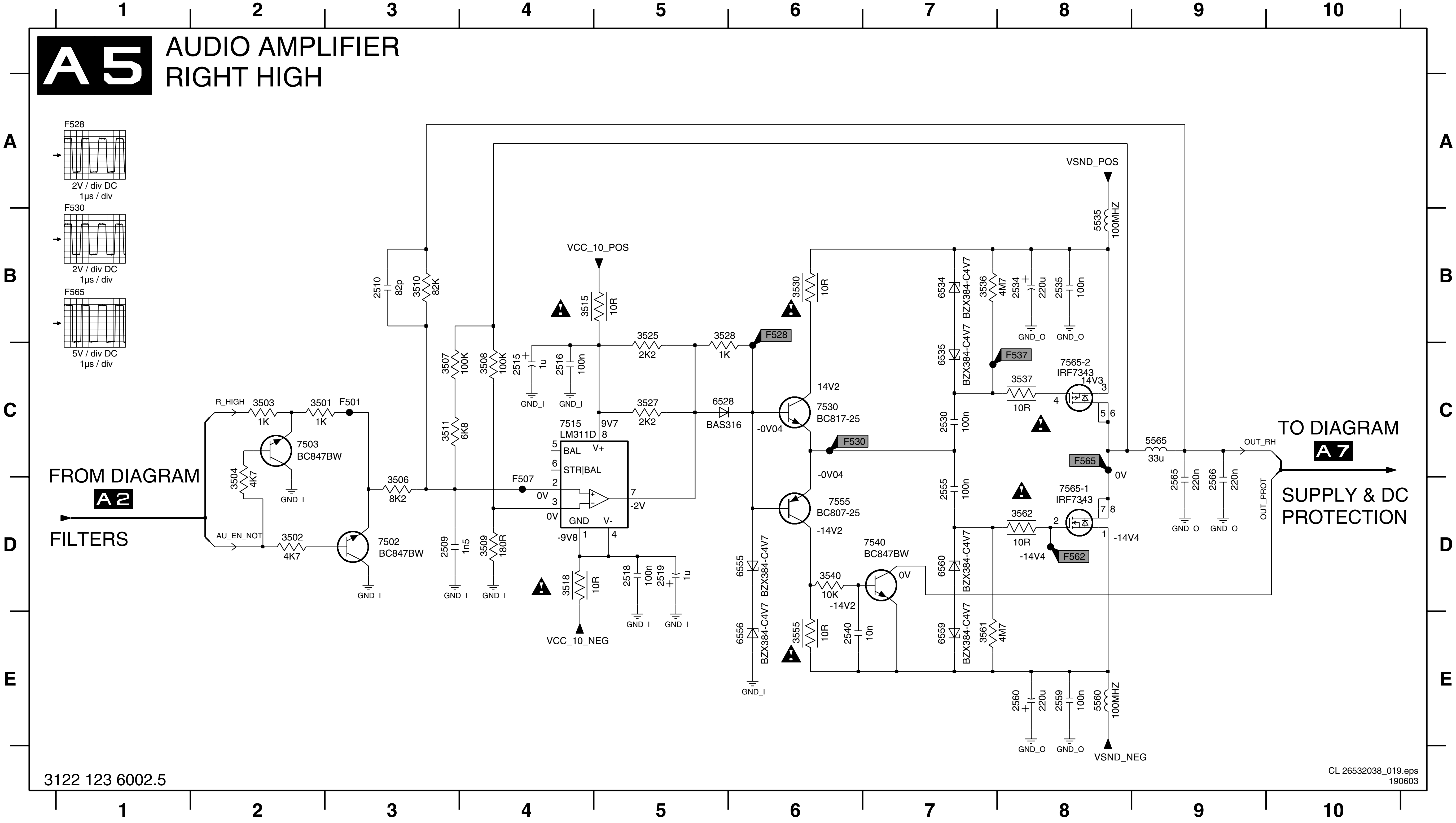
Audio Amplifier Left Low

2409 D3	2416 C4	2430 C7	2440 E6	2460 E8	3401 C3	3404 D2	3408 C4	3411 C3	3425 B5	3430 B6	3440 D6	3462 D8	5465 C9	6435 C7	6459 E7	7403 C2	7440 D7	7465-2 C8	F428 B6	F462 D8
2410 B3	2418 D5	2434 B8	2455 D7	2465 D9	3402 D2	3406 C3	3409 D4	3415 B4	3427 C5	3436 B7	3455 E6	5435 B8	6428 C5	6455 D6	6460 D7	7415 C4	7455 D6	F401 C3	F430 C6	F465 C8
2415 C4	2419 D5	2435 B8	2459 E8	2466 D9	3403 C2	3407 C3	3410 B3	3418 D4	3428 B5	3437 C8	3461 E7	5460 E8	6434 B7	6456 E6	7402 D3	7430 C6	7465-1 D8	F407 D4	F437 C8	


A4
AUDIO AMPLIFIER LEFT LOW
1 2 3 4 5 6 7 8 9 10
A B C D E
F428
2V / div DC
1µs / div
F430
2V / div DC
1µs / div
F465
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
L_LOW
AU_EN_NOT
3403 1K
3401 1K
F401
7403 BC847BW
3404 4K7
GND_I
3402 4K7
7402 BC847BW
3406 8K2
2410 82p
3410 82K
3407 100K
3408 100K
3411 15K
2409 1n5
3409 180R
VCC_10_POS
3415 10R
2415 1u
2416 100n
3425 2K2
3427 2K2
3428 1K
F428
6428 BAS316
F407
0V
7415 LM311D
9V7
BAL
STR|BAL
V+
GND
V-
-2V
-9V8
3418 10R
2418 100n
2419 1u
VCC_10_NEG
3430 10R
14V2
7430 BC817-25
-0V04
F430
7455 BC807-25
-14V2
6455 BZX384-C4V7
6456 BZX384-C4V7
3440 10K
7440 BC847BW
3455 10R
2440 10n
6434 BZX384-C4V7
6435 BZX384-C4V7
3436 4M7
2434 220u
2435 100n
GND_O
F437
3437 10R
7465-2 IRF7343
14V3
2430 100n
2455 100n
7465-1 IRF7343
3462 10R
-14V4
F462
6460 BZX384-C4V7
6459 BZX384-C4V7
3461 4M7
2460 220u
2459 100n
5460 100MHZ
VSND_NEG
VSND_POS
5435 100MHZ
5465 33u
F465
2465 220n
2466 220n
OUT_LL
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC PROTECTION
3122 123 6002.5
CL 26532038_018.eps
190603

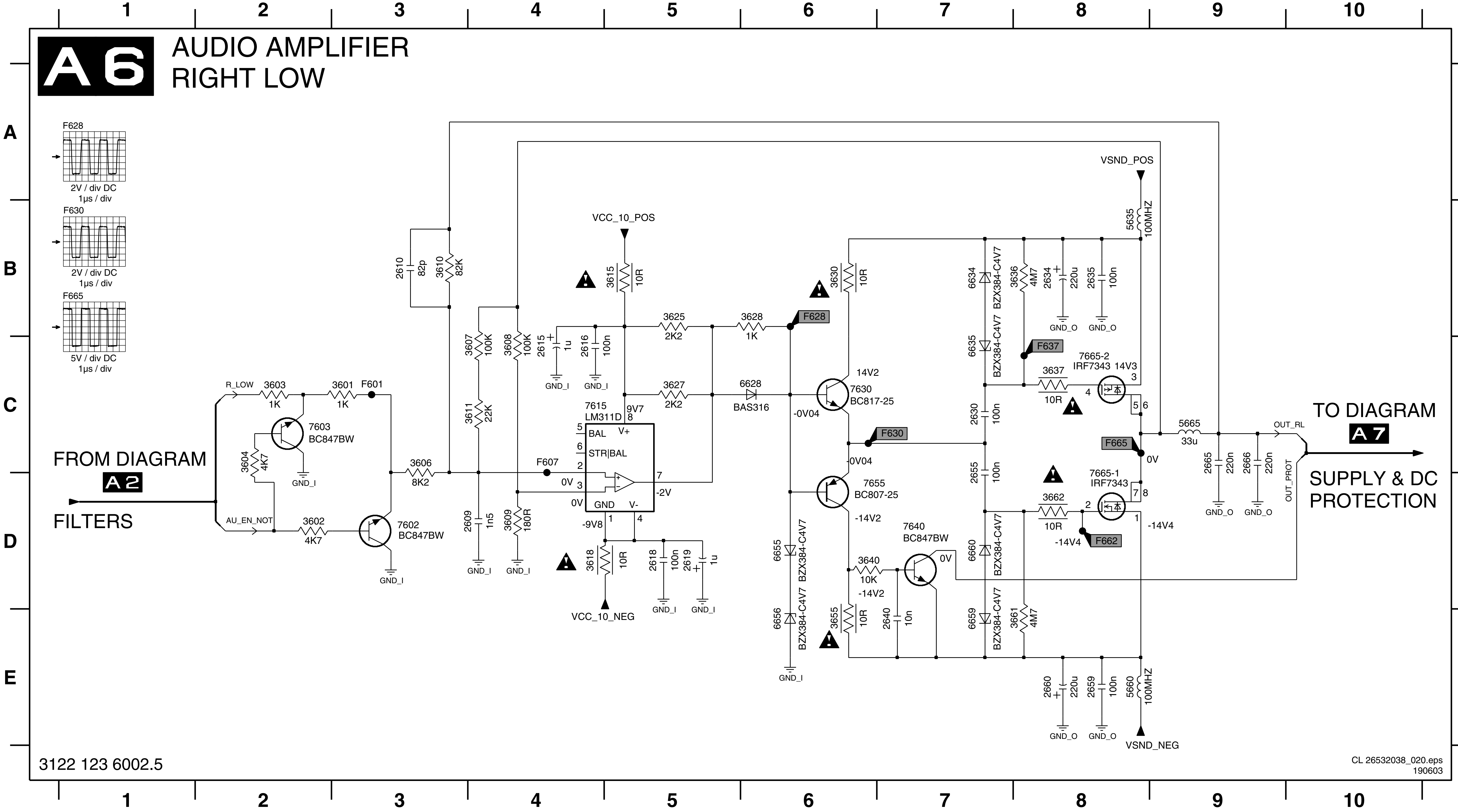
Audio Amplifier Right High

2509 D3
2510 B3
2515 C4
2516 C4
2518 D5
2519 D5
2530 C7
2534 B8
2535 B8
2540 E6
2555 D7
2559 E8
2560 E8
2565 D9
2566 D9
3501 C2
3502 D2
3503 C2
3504 D2
3506 D3
3507 C3
3508 C4
3509 D4
3510 B3
3511 C3
3515 B4
3518 D4
3525 B5
3527 C5
3528 B5
3530 B6
3536 B7
3537 C8
3540 D6
3555 E6
3561 E7
3562 D8
5535 B8
5560 E8
5565 C9
6528 C5
6534 B7
6535 C7
6555 D6
6556 E6
6559 E7
6560 D7
7502 D3
7503 C2
7515 C4
7530 C6
7540 D7
7555 D6
7565-1 D8
7565-2 C8
F501 C3
F507 D4
F528 B6
F530 C6
F537 C8
F562 D8
F565 C8


A5
AUDIO AMPLIFIER
RIGHT HIGH
1 2 3 4 5 6 7 8 9 10
A B C D E
F528
2V / div DC
1µs / div
F530
2V / div DC
1µs / div
F565
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_HIGH
AU_EN_NOT
3503
1K
3501
1K
F501
7503
BC847BW
3504
4K7
GND_I
3502
4K7
7502
BC847BW
3506
8K2
2510
82p
3510
82K
3507
100K
3511
6K8
2509
1n5
3508
100K
3509
180R
F507
0V
VCC_10_POS
3515
10R
2515
1u
2516
100n
7515
LM311D
9V7
BAL
V+
STR|BAL
GND
V-
-2V
-9V8
3518
10R
VCC_10_NEG
2518
100n
2519
1u
3525
2K2
3527
2K2
3528
1K
F528
6528
BAS316
3530
10R
14V2
7530
BC817-25
-0V04
F530
7555
BC807-25
-14V2
6555
BZX384-C4V7
6556
BZX384-C4V7
3540
10K
7540
BC847BW
3555
10R
2540
10n
6534
BZX384-C4V7
6535
BZX384-C4V7
3536
4M7
2534
220u
2535
100n
GND_O
F537
3537
10R
7565-2
IRF7343
14V3
2530
100n
2555
100n
F565
7565-1
IRF7343
3562
10R
-14V4
F562
6560
BZX384-C4V7
6559
BZX384-C4V7
3561
4M7
2560
220u
2559
100n
5560
100MHZ
VSND_NEG
VSND_POS
5535
100MHZ
5565
33u
2565
220n
2566
220n
OUT_RH
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
3122 123 6002.5
CL 26532038_019.eps
190603

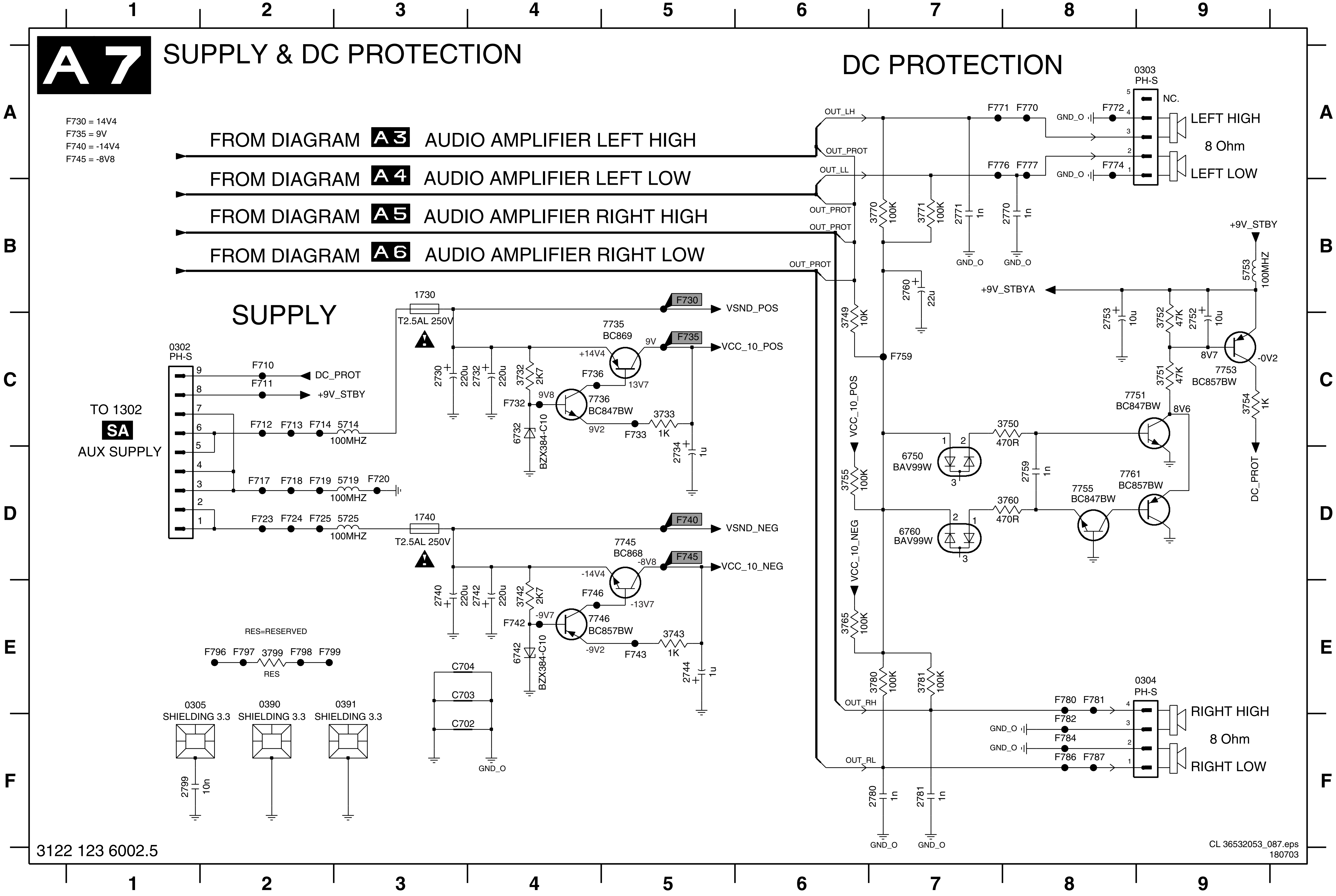
Audio Amplifier Right Low

2609	D4
2610	B3
2615	C4
2616	C4
2618	D5
2619	D5
2630	C7
2634	B8
2635	B8
2640	E7
2655	C7
2659	E8
2660	E8
2665	C9
2666	C9
3601	C3
3602	D2
3603	C2
3604	C2
3606	C3
3607	C4
3608	C4
3609	D4
3610	B3
3611	C4
3615	B5
3618	D4
3625	B5
3627	C5
3628	B6
3630	B6
3636	B8
3637	C8
3640	D6
3655	E6
3661	E8
3662	D8
5635	B8
5660	E8
5665	C9
6628	C6
6634	B7
6635	C7
6655	D6
6656	E6
6659	E7
6660	D7
7602	D3
7603	C2
7615	C4
7630	C6
7640	D7
7655	D6
7665-1	D8
7665-2	C8
F601	C3
F607	C4
F628	B6
F630	C7
F637	C8
F662	D8
F665	C8



A6
AUDIO AMPLIFIER
RIGHT LOW
F628
2V / div DC
1µs / div
F630
2V / div DC
1µs / div
F665
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_LOW
AU_EN_NOT
3603 1K
3601 1K
F601
7603 BC847BW
3604 4K7
GND_I
3602 4K7
7602 BC847BW
2610 82p
3610 82K
3606 8K2
3607 100K
3608 100K
3611 22K
2609 1n5
3609 180R
F607
VCC_10_POS
3615 10R
2615 1u
2616 100n
7615 LM311D
9V7
BAL
STR|BAL
V+
GND
V-
0V
-2V
-9V8
3618 10R
2618 100n
2619 1u
VCC_10_NEG
3625 2K2
3627 2K2
3628 1K
F628
6628 BAS316
-0V04
3630 10R
14V2
7630 BC817-25
F630
-0V04
7655 BC807-25
-14V2
6655 BZX384-C4V7
6656 BZX384-C4V7
3640 10K
-14V2
7640 BC847BW
0V
3655 10R
2640 10n
6634 BZX384-C4V7
6635 BZX384-C4V7
3636 4M7
2634 220u
2635 100n
GND_O
F637
3637 10R
7665-2 IRF7343
14V3
2630 100n
2655 100n
F665
0V
7665-1 IRF7343
3662 10R
-14V4
F662
-14V4
6660 BZX384-C4V7
6659 BZX384-C4V7
3661 4M7
2660 220u
2659 100n
5660 100MHZ
VSND_NEG
VSND_POS
5635 100MHZ
5665 33u
2665 220n
2666 220n
OUT_RL
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
3122 123 6002.5
CL 26532038_020.eps
190603

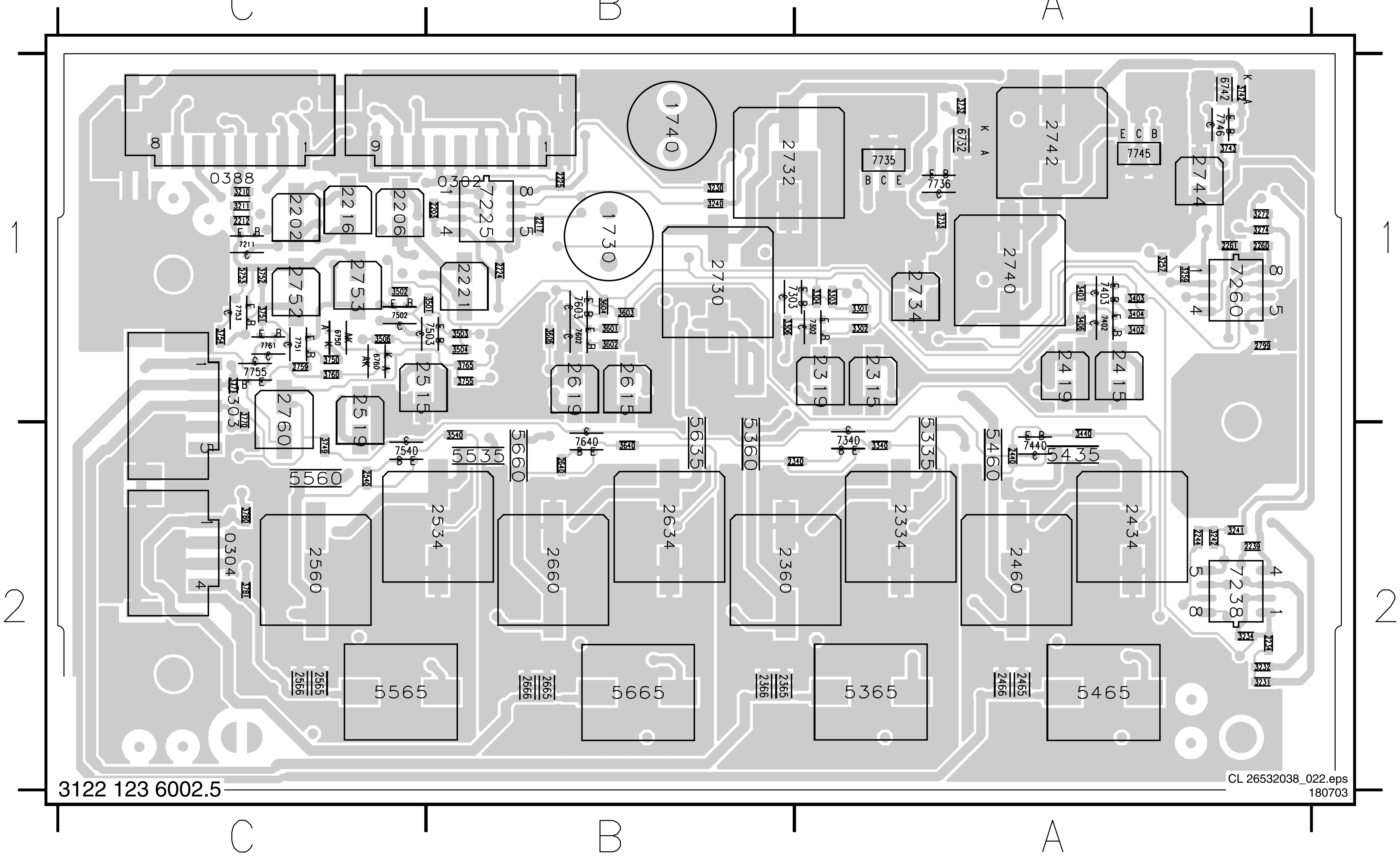
Supply & DC Protection


A7
SUPPLY & DC PROTECTION
DC PROTECTION
SUPPLY
F730 = 14V4
F735 = 9V
F740 = -14V4
F745 = -8V8
FROM DIAGRAM A3 AUDIO AMPLIFIER LEFT HIGH
FROM DIAGRAM A4 AUDIO AMPLIFIER LEFT LOW
FROM DIAGRAM A5 AUDIO AMPLIFIER RIGHT HIGH
FROM DIAGRAM A6 AUDIO AMPLIFIER RIGHT LOW
OUT_LH
OUT_PROT
OUT_LL
OUT_PROT
OUT_PROT
OUT_PROT
OUT_RH
OUT_RL
0303
PH-S
NC.
LEFT HIGH
8 Ohm
LEFT LOW
F771 F770
F772
F776 F777
F774
GND_O
3770 100K
3771 100K
2771 1n
2770 1n
2760 22u
+9V_STBY
+9V_STBYA
5753 100MHZ
2753 10u
3752 47K
2752 10u
8V7
7753 BC857BW
-0V2
3751 47K
3754 1K
DC_PROT
3749 10K
F759
VCC_10_POS
VCC_10_NEG
7751 BC847BW
8V6
3750 470R
6750 BAV99W
2759 1n
3755 100K
7755 BC847BW
7761 BC857BW
3760 470R
6760 BAV99W
3765 100K
3780 100K
3781 100K
0304
PH-S
RIGHT HIGH
8 Ohm
RIGHT LOW
F780 F781
F782
F784
F786 F787
2780 1n
2781 1n
1730 T2.5AL 250V
F730 VSND_POS
7735 BC869
+14V4
9V
F735 VCC_10_POS
13V7
F736
3732 2K7
9V8
F732
7736 BC847BW
9V2
6732 BZX384-C10
3733 1K
F733
2734 1u
2730 220u
2732 220u
0302 PH-S
9 8 7 6 5 4 3 2 1
F710 DC_PROT
F711 +9V_STBY
TO 1302
SA
AUX SUPPLY
F712 F713 F714 5714 100MHZ
F717 F718 F719 5719 100MHZ F720
F723 F724 F725 5725 100MHZ
1740 T2.5AL 250V
F740 VSND_NEG
7745 BC868
-14V4
-8V8
F745 VCC_10_NEG
-13V7
F746
3742 2K7
-9V7
F742
7746 BC857BW
-9V2
6742 BZX384-C10
3743 1K
F743
2744 1u
2740 220u
2742 220u
RES=RESERVED
F796 F797 3799 F798 F799
RES
C704
C703
C702
0305 SHIELDING 3.3
0390 SHIELDING 3.3
0391 SHIELDING 3.3
2799 10n
3122 123 6002.5
CL 36532053_087.eps
180703
1 2 3 4 5 6 7 8 9
A B C D E F

0302	C1
0303	A8
0304	E8
0305	E1
0390	E2
0391	E3
1730	B3
1740	D3
2730	C3
2732	C4
2734	D5
2740	E3
2742	E4
2744	E5
2752	C9
2753	C8
2759	D8
2760	B7
2770	B8
2771	B7
2780	F7
2781	F7
2799	F1
3732	C4
3733	C5
3742	E4
3743	E5
3749	C6
3750	C8
3751	C9
3752	C9
3754	C9
3755	D6
3760	D8
3765	E6
3770	B7
3771	B7
3780	E7
3781	E7
3799	E2
5714	C3
5719	D3
5725	D3
5753	B9
6732	C4
6742	E4
6750	D7
6760	D7
7735	C5
7736	C4
7745	D5
7746	E4
7751	C8
7753	C9
7755	D8
7761	D9
C702	F3
C703	E3
C704	E3
F710	C2
F711	C2
F712	C2
F713	C2
F714	C2
F717	D2
F718	D2
F719	D2
F720	D3
F723	D2
F724	D2
F725	D2
F730	B5
F732	C4
F733	C5
F735	C5
F736	C4
F740	D5
F742	E4
F743	E5
F745	D5
F746	E4
F759	C7
F770	A8
F771	A8
F772	A8
F774	A8
F776	A8
F777	A8
F780	E8
F781	E8
F782	F8
F784	F8
F786	F8
F787	F8
F796	E2
F797	E2
F798	E2
F799	E2

Layout Audio Panel (Top Side)

0302 B1	2216 C1	2315 A1	2440 A2	2566 C2	2734 A1	3211 C1	3272 A1	3403 A1	3601 B1	3749 C2	3780 C2	5565 C2	7225 B1	7503 B1	7753 C1
0303 C1	2217 B1	2319 A1	2460 A2	2615 B1	2740 A1	3230 B1	3274 A1	3404 A1	3602 B1	3750 C1	3781 C2	5635 B2	7238 A2	7540 C2	7755 C1
0304 C2	2221 B1	2334 A2	2465 A2	2619 B1	2742 A1	3231 A2	3301 A1	3406 A1	3603 B1	3751 C1	5335 A2	5660 B2	7260 A1	7602 B1	7761 C1
0388 C1	2224 B1	2340 A2	2466 A2	2634 B2	2744 A1	3232 A2	3302 A1	3440 A2	3604 B1	3752 C1	5360 B2	5665 B2	7302 A1	7603 B1	
1730 B1	2225 B1	2360 B2	2515 C1	2640 B2	2752 C1	3234 A2	3303 A1	3501 B1	3606 B1	3754 C1	5365 A2	5753 C1	7303 B1	7640 B2	
1740 B1	2234 A2	2365 B2	2519 C1	2660 B2	2753 C1	3240 B1	3304 A1	3502 C1	3640 B2	3755 B1	5435 A2	6732 A1	7340 A2	7735 A1	
2202 C1	2239 A2	2366 B2	2534 B2	2665 B2	2759 C1	3241 A2	3306 B1	3503 B1	3732 A1	3760 C1	5460 A2	6742 A1	7402 A1	7736 A1	
2203 B1	2244 A2	2415 A1	2540 C2	2666 B2	2760 C1	3242 A2	3340 A2	3504 B1	3733 A1	3765 B1	5465 A2	6750 C1	7403 A1	7745 A1	
2206 C1	2260 A1	2419 A1	2560 C2	2730 B1	2799 A1	3257 A1	3401 A1	3506 C1	3742 A1	3770 C1	5535 B2	6760 C1	7440 A2	7746 A1	
2212 C1	2261 A1	2434 A2	2565 C2	2732 B1	3210 C1	3259 A1	3402 A1	3540 B2	3743 A1	3771 C1	5560 C2	7211 C1	7502 C1	7751 C1	


C
B
A
1
2
0388
0302
0303
0304
1740
1730
2732
2742
2744
2730
2740
2734
7735
7736
7745
7746
6742
6732
2202
2216
2206
7225
2752
2753
2221
7211
7753
7761
7755
7751
7502
7503
6750
6760
7603
7602
2515
2519
2760
2619
2615
7303
7302
2319
2315
7403
7402
2419
2415
7260
7540
7640
7340
7440
5535
5560
5660
5635
5360
5335
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5435
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2434
7238
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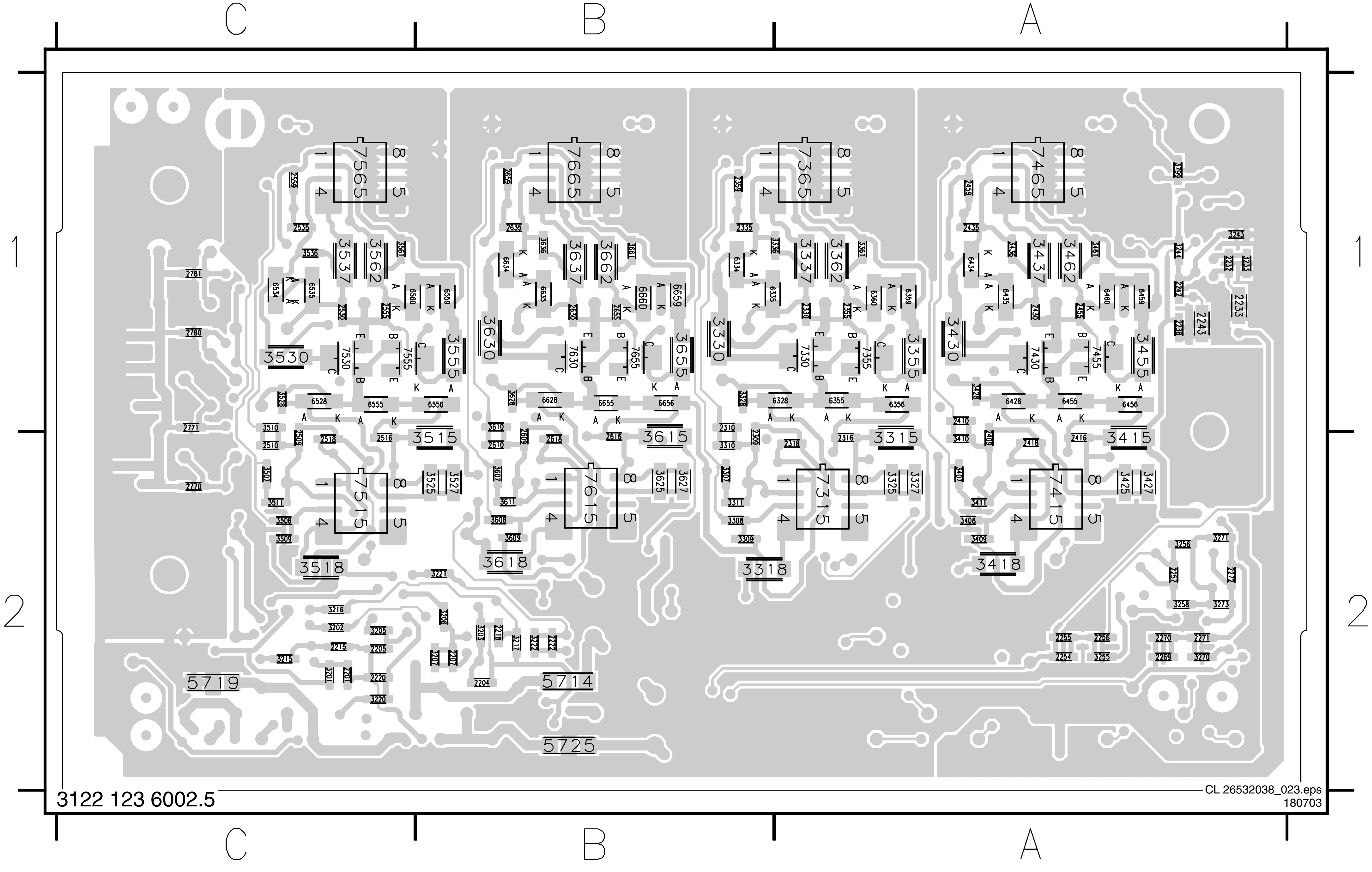
5665
5365
5465
2566
2565
2666
2665
2366
2365
2466
2465
3122 123 6002.5
CL 26532038_022.eps
180703

Layout Audio Panel (Bottom Side)

2201	C2	2255	A2	2359	B1	2535	C1	2781	C1	3243	A1	3318	B2	3411	A2	3509	C2	3607	B2	3661	B1	6434	A1	6634	B1	7515	C2
2204	B2	2256	A2	2409	A2	2555	C1	3201	C2	3244	A1	3325	A2	3415	A2	3510	C1	3608	B2	3662	B1	6435	A1	6635	B1	7530	C1
2205	C2	2257	A2	2410	A1	2559	C1	3202	C2	3255	A2	3327	A2	3418	A2	3511	C2	3609	B2	3799	A1	6455	A1	6655	B1	7555	C1
2207	B2	2269	A2	2416	A2	2609	B2	3203	B2	3256	A2	3328	B1	3425	A2	3515	B2	3610	B1	5714	B2	6456	A1	6656	B1	7565	C1
2215	C2	2270	A2	2418	A2	2610	B2	3205	C2	3258	A2	3330	B1	3427	A2	3518	C2	3611	B2	5719	C2	6459	A1	6659	B1	7615	B2
2218	B2	2271	A2	2430	A1	2616	B2	3206	B2	3270	A2	3336	A1	3428	A1	3525	B2	3615	B2	5725	B2	6460	A1	6660	B1	7630	B1
2220	C2	2272	A2	2435	A1	2618	B2	3207	B2	3271	A2	3337	A1	3430	A1	3527	B2	3618	B2	6328	A1	6528	C1	7315	A2	7655	B1
2222	B2	2309	B2	2455	A1	2630	B1	3215	C2	3273	A2	3355	A1	3436	A1	3528	C1	3625	B2	6334	B1	6534	C1	7330	A1	7665	B1
2232	A1	2310	B1	2459	A1	2635	B1	3216	C2	3307	B2	3361	A1	3437	A1	3530	C1	3627	B2	6335	B1	6535	C1	7355	A1		
2233	A1	2316	A2	2509	C2	2655	B1	3217	B2	3308	B2	3362	A1	3455	A1	3536	C1	3628	B1	6355	A1	6555	C1	7365	A1		
2238	A1	2318	A2	2510	C2	2659	B1	3220	C2	3309	B2	3407	A2	3461	A1	3537	C1	3630	B1	6356	A1	6556	B1	7415	A2		
2242	A1	2330	A1	2516	C2	2770	C2	3221	B2	3310	B2	3408	A2	3462	A1	3555	B1	3636	B1	6359	A1	6559	B1	7430	A1		
2243	A1	2335	B1	2518	C2	2771	C1	3222	B2	3311	B2	3409	A2	3507	C2	3561	C1	3637	B1	6360	A1	6560	C1	7455	A1		
2254	A2	2355	A1	2530	C1	2780	C1	3233	A1	3315	A2	3410	A2	3508	C2	3562	C1	3655	B1	6428	A1	6628	B1	7465	A1		


C
B
A
1
2
7565
7665
7365
7465
7515
7615
7315
7415
3530
3630
3330
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3555
3655
3355
3455
3515
3615
3315
3415
3518
3618
3318
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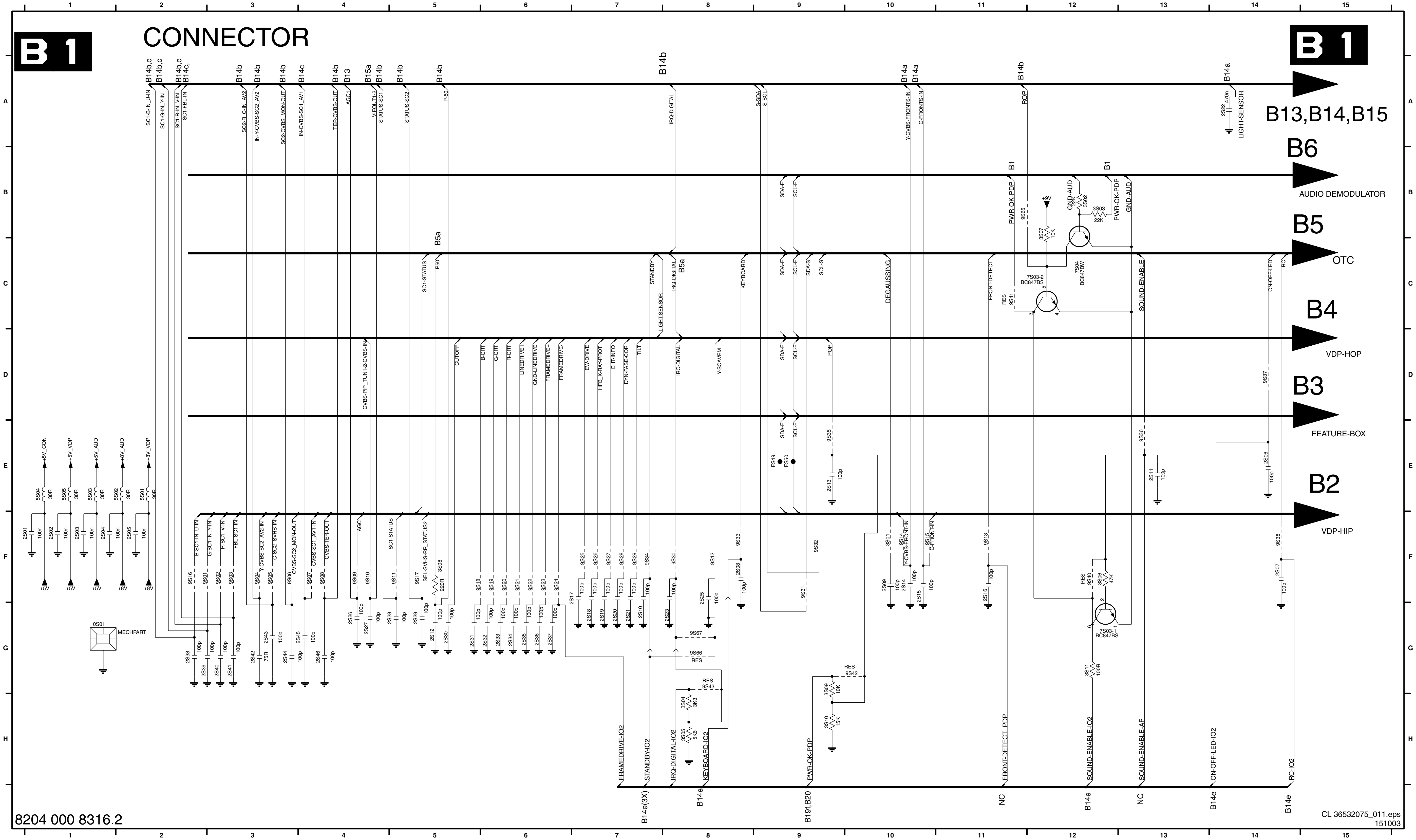
3562
3637
3662
3337
3362
3437
3462
5719
5714
5725
3122 123 6002.5

CL 26532038_023.eps
180703

Small Signal Board: Connector

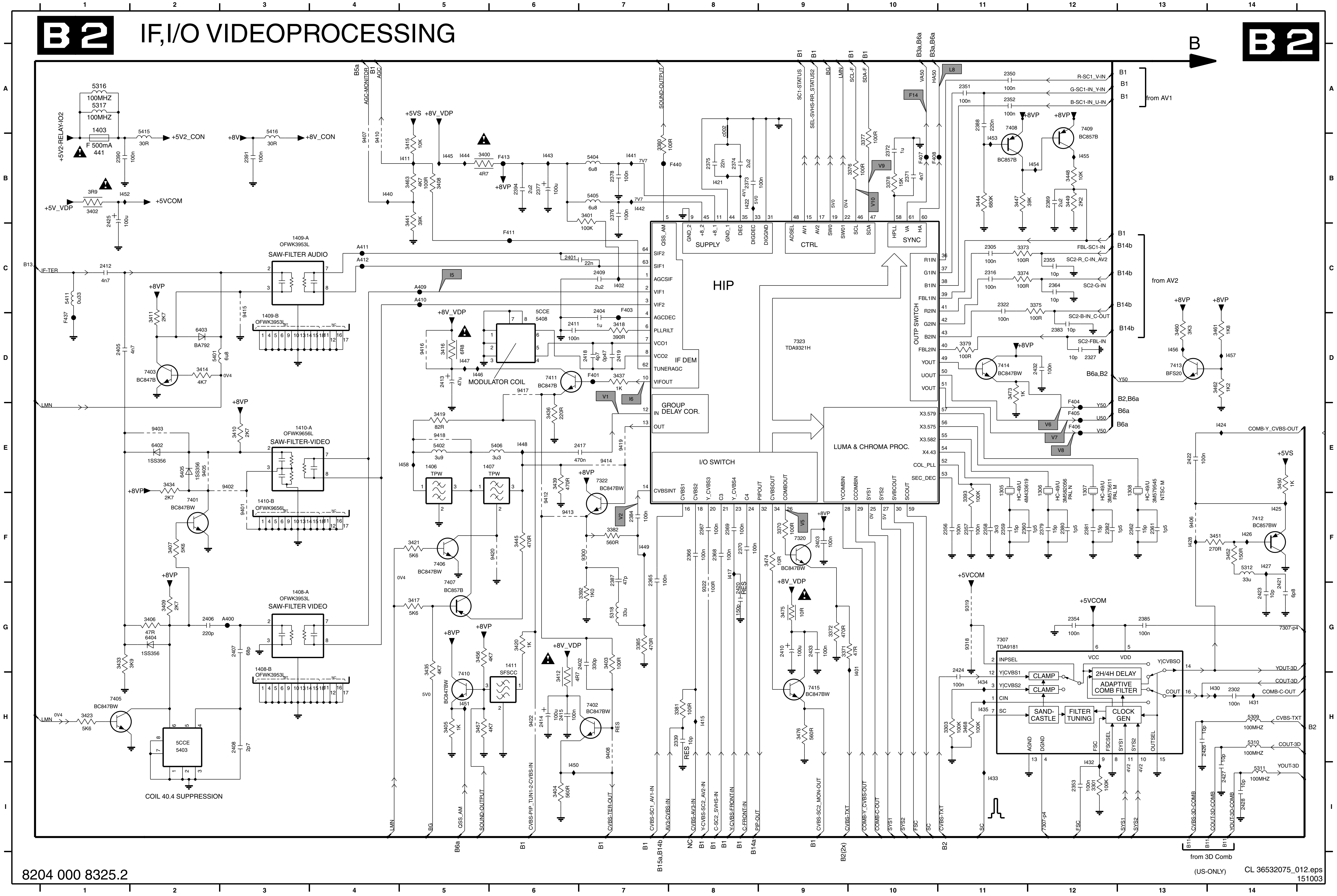
0S01	G1
2S01	F1
2S02	F1
2S03	F1
2S04	F1
2S05	F2
2S06	E14
2S07	F14
2S08	F8
2S09	F10
2S10	G7
2S11	E13
2S12	G5
2S13	E9
2S14	F10
2S15	F10
2S16	F11
2S17	F7
2S18	G7
2S19	G7
2S20	G7
2S21	G7
2S22	C14
2S23	G8
2S25	F8
2S26	G4
2S27	G4
2S28	G5
2S29	G5
2S30	G5
2S31	G5
2S32	G6
2S33	G6
2S34	G6
2S35	G6
2S36	G6
2S37	G6
2S38	G2
2S39	G2
2S40	G3
2S41	G3
2S42	G3
2S43	G3
2S44	G3
2S45	G4
2S46	G4
3S01	F10
3S02	B12
3S03	B12
3S04	H8
3S05	H8
3S06	F12
3S07	B12
3S08	F5
3S09	G9
3S10	H9
3S11	G12
5S01	E2
5S02	E2
5S03	E1
5S04	E1
5S05	E1
7S03-1	G12
7S03-2	C12
7S04	C12
9S01	F2
9S02	F3
9S03	F3
9S04	F3
9S05	F3
9S06	F3
9S07	F4
9S08	F4
9S09	F4
9S10	F4
9S11	F5
9S12	F8
9S13	F11
9S14	F10
9S15	F10
9S16	F2
9S17	F5
9S18	F5
9S19	F6
9S20	F6
9S21	F6
9S22	F6
9S23	F6
9S24	F6
9S25	F7
9S26	F7
9S27	F7
9S28	F7
9S29	F7
9S30	F8
9S31	F9
9S32	F9
9S33	F8
9S34	F7
9S35	E9
9S36	E13
9S37	D14
9S38	F14
9S40	F12
9S41	C11
9S42	G10
9S43	G8
9S65	B11
9S66	G8
9S67	G8
FS49	E9
FS50	E9


B1
CONNECTOR
B1
B13,B14,B15
B6
AUDIO DEMODULATOR
B5
OTC
B4
VDP-HOP
B3
FEATURE-BOX
B2
VDP-HIP
SC1-B-IN_U-IN
SC1-G-IN_Y-IN
SC1-R-IN_V-IN
SC1-FBL-IN
SC2-R_C-IN_AV2
IN-Y-CVBS-SC2_AV2
SC2-CVBS_MON-OUT
IN-CVBS-SC1_AV1
TER-CVBS-OUT
AGC1
VIEOUT1-2
STATUS-SC1
STATUS-SC2
P-50
IRQ-DIGITAL
S-SDA
S-SCL
Y-CVBS-FRONTS-IN
C-FRONTS-IN
ROP
LIGHT-SENSOR
PWR-OK-PDP
GND-AUD
STANDBY
KEYBOARD
SDA-F
SCL-F
SDA-S
SCL-S
DEGAUSSING
FRONT-DETECT
SOUND-ENABLE
ON-OFF-LED
RC
CUTOFF
B-CRT
G-CRT
R-CRT
LINEDRIVE1
GND-LINEDRIVE
FRAMEDRIVE+
FRAMEDRIVE-
EW-DRIVE
HFB_X-RAY-PROT
EHT-INFO
DYN-FASE-COR
TILT
Y-SCAVEM
POR
CVBS-PIP_TUN1-2-CVBS-IN
7S03-2 BC847BS
7S04 BC847BW
7S03-1 BC847BS
MECHPART
+5V_CON
+5V_VDP
+5V_AUD
+8V_AUD
+8V_VDP
FRAMEDRIVE-IO2
STANDBY-IO2
IRQ-DIGITAL-IO2
KEYBOARD-IO2
PWR-OK-PDP
FRONT-DETECT_PDP
SOUND-ENABLE-IO2
SOUND-ENABLE-AP
ON-OFF-LED-IO2
RC-IO2
B14e(3X)
B14e
B19f,B20
NC
B14e
NC
B14e
B14e

8204 000 8316.2

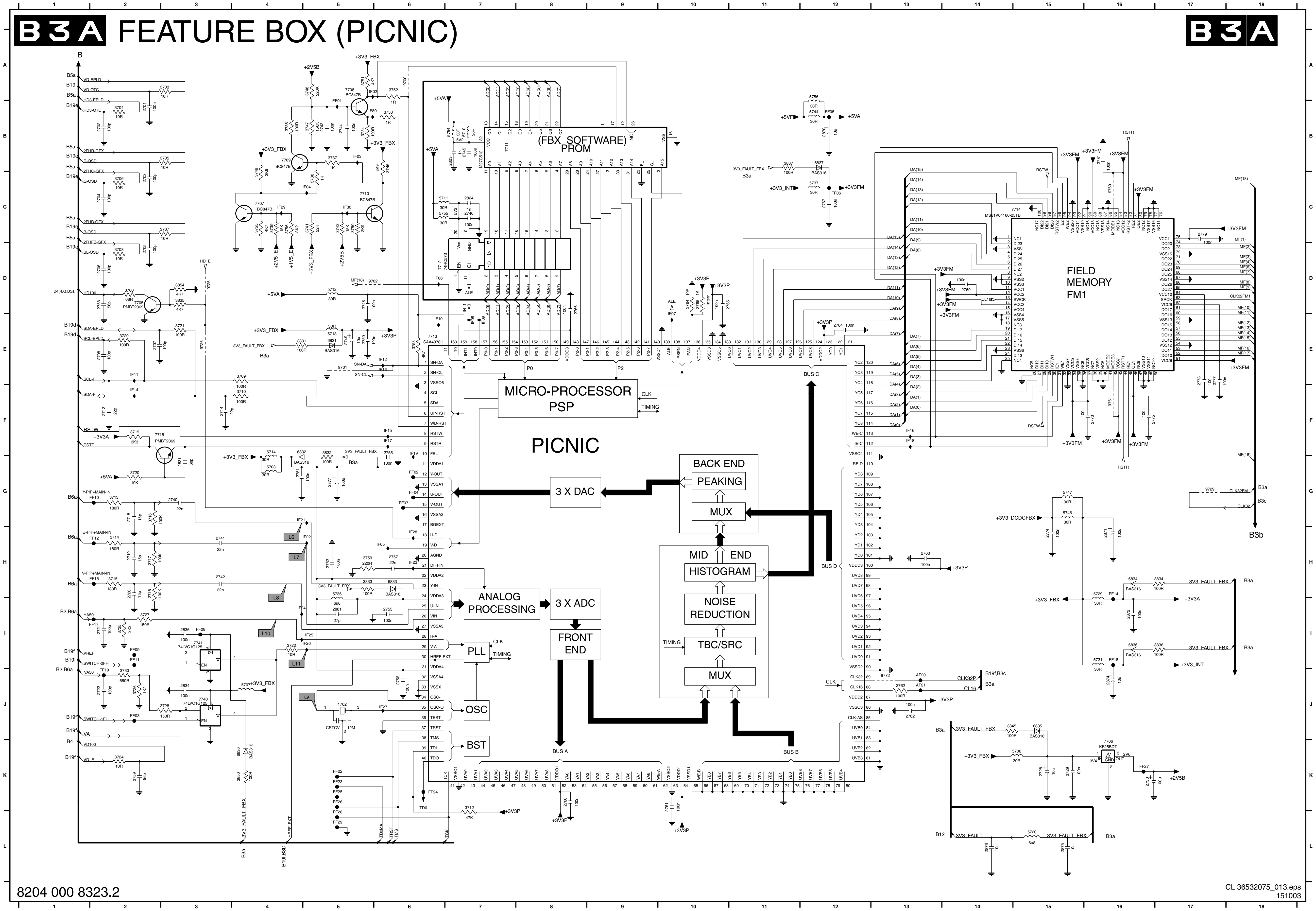
CL 36532075_011.eps
151003

Small Signal Board: IF, I/O Videoprocessing


B2
IF,I/O VIDEOPROCESSING
HIP
7323
TDA9321H
SUPPLY
CTRL
SYNC
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
SAW-FILTER AUDIO
SAW-FILTER-VIDEO
SAW-FILTER VIDEO
MODULATOR COIL
COIL 40.4 SUPPRESSION
7307
TDA9181
CLAMP
2H/4H DELAY
ADAPTIVE COMB FILTER
SAND-CASTLE
FILTER TUNING
CLOCK GEN
from AV1
from AV2
from 3D Comb
(US-ONLY)
8204 000 8325.2
CL 36532075_012.eps
151003

1305	E11
1306	E12
1307	E12
1308	E13
1403	A1
1406	E5
1407	E5
1408-A	G3
1408-B	G3
1409-A	C3
1409-B	D3
1410-A	E4
1410-B	F3
1411	G6
2302	H14
2305	C11
2316	C11
2322	C11
2327	D12
2339	H8
2350	A11
2351	A11
2352	A11
2353	I12
2354	G12
2355	C12
2356	F11
2357	F11
2358	F11
2359	F11
2360	F11
2361	F13
2362	F13
2364	C12
2365	F7
2366	F8
2367	F8
2368	F8
2369	F8
2370	F8
2371	B10
2372	B10
2373	B8
2374	B8
2375	B8
2376	B7
2377	B6
2378	B7
2379	F12
2380	F12
2381	F12
2382	F12
2383	D12
2384	F7
2385	G13
2387	F7
2388	A11
2389	B12
2390	B1
2391	B3
2394	B6
2401	C6
2402	G7
2403	F9
2404	C7
2405	D1
2406	G2
2407	G3
2408	H3
2409	C7
2410	G9
2411	D6
2412	C1
2413	D5
2414	H6
2415	H6
2417	E7
2418	D7
2419	D7
2420	G8
2421	G14
2422	E13
2423	G14
2424	G11
2425	B1
2426	H13
2427	I14
2428	I14
2432	D12
2433	G9
3301	I12
3303	H11
3370	F9
3371	G9
3372	G9
3373	C11
3374	C11
3375	C12
3376	B10
3377	B10
3378	B10
3379	D11
3380	B7
3381	H8
3382	F7
3385	G7
3392	G7
3393	F11
3400	B5
3401	B7
3402	B1
3403	G7
3404	I6
3405	H5
3406	G2
3407	F2
3408	B5
3409	G2
3410	E3
3411	D2
3412	H6
3414	D2
3415	B5
3416	D5
3417	G5
3418	D7
3419	E5
3420	G6
3421	F5
3423	H1
3433	G1
3434	E2
3435	G5
3436	E6
3437	D7
3439	E6
3441	B5
3444	B11
3445	F6
3447	B11
3448	B12
3449	B12
3450	E14
3451	F14
3452	F14
3456	G5
3457	H5
3460	D13
3461	D14
3462	D14
3463	B5
3468	H11
3473	D11
3474	F9
3475	G9
3476	H9
5309	H14
5310	H14
5311	I14
5312	F14
5316	A1
5317	A1
5318	G7
5401	D2
5402	E5
5403	H2
5404	B7
5405	B7
5406	E6
5408	D6
5411	C1
5415	A2
5416	A3
6402	E2
6403	D2
6404	G2
6405	E2
7307	G11
7320	F9
7322	E7
7323	D9
7401	F2
7402	H7
7403	D2
7405	H1
7406	F5
7407	G5
7408	A11
7409	A12
7410	H5
7411	D6
7412	F14
7413	D13
7414	D11
7415	H9
9300	F7
9318	G11
9319	G11
9322	G8
9401	F3
9402	E3
9403	E2
9405	E2
9406	F13
9407	B4
9408	H7
9410	B4
9412	F6
9413	F6
9414	E7
9415	C3
9416	D5
9417	D6
9418	E5
9419	E7
9420	F6
9422	H6
A400	G3
A409	C5
A410	C5
A411	C4
A412	C4
F401	D7
F403	C7
F404	E12
F405	E12
F406	E12
F407	B10
F408	B10
F411	C6
F413	B6
F437	D1
F440	B8
I401	G10
I402	C7
I411	B5
I415	H8
I417	F8
I421	B8
I422	B8
I424	E14
I425	F14
I426	F14
I427	F14
I428	F13
I430	H14
I431	H14
I432	I12
I433	I11
I434	H11
I435	H11
I440	B4
I441	B7
I442	B7
I443	B6
I444	B5
I445	B5
I446	D5
I447	D5
I448	E6
I449	F7
I450	I6
I451	H5
I452	B1
I453	B11
I454	B12
I455	B12
I456	D13
I457	D14
I458	E5
c002	A8

Small Signal Board: Feature Box (PICNIC)


B3A
FEATURE BOX (PICNIC)
B3A
(FBX_SOFTWARE)
PROM
M27C512
7711
74HC573
7712
MICRO-PROCESSOR
PSP
SAA4978H
7713
PICNIC
3 X DAC
BACK END
PEAKING
MUX
MID
END
HISTOGRAM
NOISE
REDUCTION
TBC/SRC
MUX
ANALOG
PROCESSING
3 X ADC
FRONT
END
PLL
OSC
BST
FIELD
MEMORY
FM1
MSM1V04160-25TB
7714
BUS A
BUS B
BUS C
BUS D
CLK
TIMING
+5VA
+3V3_FBX
+3V3P
+3V3FM
+2V5B
3V3_FAULT_FBX
RSTW
RSTR
KF25BDT
7706
L6
L7
L8
L9
L10
L11
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
K
L

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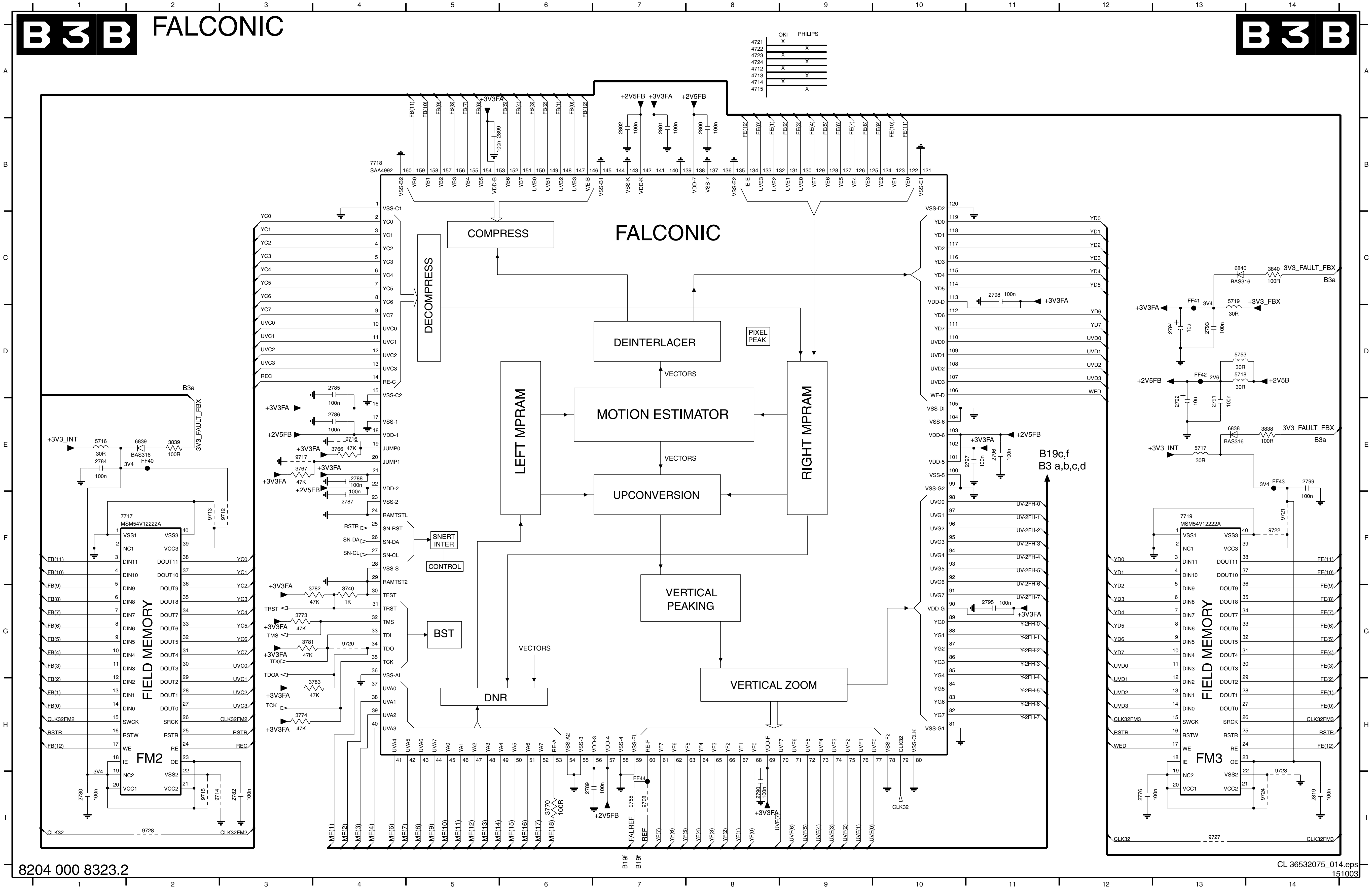
CL 36532075_013.eps
151003

1702	J5	3834	H17
2701	B2	3835	D3
2702	B2	3836	I17
2703	C2	3837	B11
2704	C2	3845	J14
2705	D2	3850	K4
2706	D2	3854	D3
2707	E2	5703	G4
2708	E2	5706	K15
2713	F2	5707	J4
2714	F3	5710	B7
2718	G2	5711	C6
2719	H2	5712	D5
2720	H2	5713	E5
2721	I2	5714	F4
2722	J2	5720	L15
2728	K15	5729	H16
2729	K15	5731	I16
2730	K16	5736	H5
2740	G3	5737	C12
2741	H3	5744	B12
2742	H3	5746	G15
2743	B5	5747	G15
2744	B5	5754	B7
2745	B7	5755	C6
2746	C7	5756	A12
2748	D5	6830	K4
2749	E5	6831	E5
2750	E5	6832	F4
2751	G4	6833	H6
2752	H5	6834	H16
2753	I6	6835	J15
2755	F6	6836	I16
2756	J6	6837	B12
2757	H6	7705	D2
2758	D2	7706	K16
2759	K2	7707	C4
2760	K8	7708	A5
2761	K10	7709	B4
2762	J13	7710	C5
2763	H13	7711	B7
2764	E12	7712	D6
2765	D10	7713	E6
2766	D8	7714	C15
2767	C12	7715	F2
2769	D14	7740	J3
2773	F16	7741	I3
2774	H15	9700	A6
2775	F16	9701	E5
2777	E17	9702	D5
2778	E17	9725	D3
2779	C17	9726	E3
2781	B16	9729	G17
2823	B7	9760	C16
2824	C7	9761	F16
2831	G3	9772	J13
2834	J3	AF20	J13
2836	I3	AF21	J13
2870	B12	FF01	B5
2871	H16	FF02	G6
2872	I16	FF03	J2
2874	J16	FF04	G6
2875	L15	FF05	B12
2876	L14	FF06	C12
2877	G5	FF07	G6
2881	I5	FF08	I3
3703	A3	FF09	I2
3704	B2	FF10	G2
3705	B3	FF11	I2
3706	C2	FF12	H2
3707	C3	FF14	H16
3708	D2	FF15	H2
3709	E4	FF17	I2
3710	F4	FF18	I16
3712	K7	FF19	J2
3713	G2	FF22	K5
3714	H2	FF23	K5
3715	H2	FF24	K6
3716	G2	FF25	K5
3717	H2	FF26	K5
3718	H2	FF27	K16
3719	F2	FF28	L5
3720	G2	FF29	L5
3721	E3	IF02	A5
3722	I4	IF03	B5
3724	K2	IF04	C5
3725	I2	IF05	H6
3726	J2	IF06	D6
3727	I2	IF07	E10
3728	J3	IF08	E7
3729	E2	IF09	E7
3730	J2	IF10	E6
3736	B4	IF11	E2
3737	B5	IF12	E6
3738	C5	IF13	E6
3739	C4	IF14	F2
3741	C5	IF15	F6
3743	C5	IF16	F13
3746	B6	IF17	F6
3747	B5	IF18	F13
3748	A5	IF19	F6
3749	C4	IF21	G4
3750	C5	IF22	H5
3751	A5	IF23	H6
3752	A6	IF24	I4
3753	B6	IF25	I5
3754	B5	IF26	I5
3755	C4	IF27	J6
3756	C4	IF28	H6
3758	E6	IF29	C4
3759	H5	IF30	C5
3760	D2	IF80	B5
3762	J13		
3764	D10		
3765	D10		
3831	E4		
3832	F5		
3833	H5		

Small Signal Board: Falconic

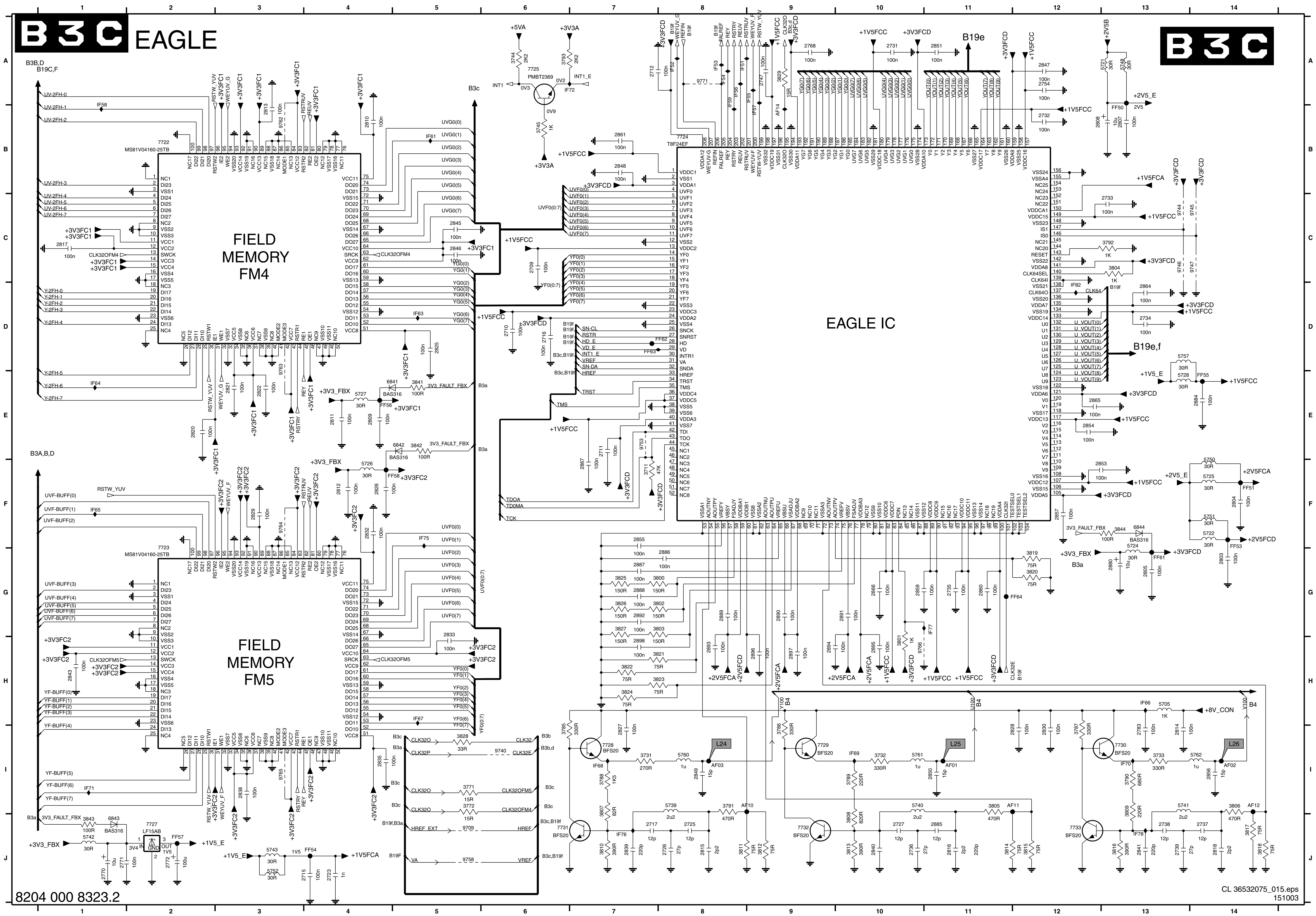

B3B
FALCONIC
FALCONIC
COMPRESS
DECOMPRESS
DEINTERLACER
PIXEL PEAK
MOTION ESTIMATOR
VECTORS
LEFT MPRAM
RIGHT MPRAM
UPCONVERSION
VERTICAL PEAKING
VERTICAL ZOOM
DNR
BST
SNERT INTER
CONTROL
7718 SAA4992
7717 MSM54V12222A
FIELD MEMORY
FM2
7719 MSM54V12222A
FIELD MEMORY
FM3
OKI PHILIPS
4721 4722 4723 4724 4712 4713 4714 4715
+3V3FA
+2V5FB
+3V3_INT
+3V3_FBX
+2V5B
3V3_FAULT_FBX
B3a
B19c,f
B3 a,b,c,d
B19f
CLK32
CLK32FM2
CLK32FM3
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

8204 000 8323.2

CL 36532075_014.eps
151003

2776	I12
2780	I1
2782	I3
2784	E1
2785	D4
2786	E4
2787	F4
2788	E4
2789	I6
2790	I8
2791	E13
2792	E13
2793	D13
2794	D13
2795	G11
2796	E11
2797	E11
2798	C11
2799	E14
2800	B8
2801	B7
2802	B7
2819	I14
2899	B5
3740	G4
3766	E4
3767	E3
3770	I6
3773	G3
3774	H3
3781	G3
3782	G4
3783	H4
3838	E14
3839	E2
3840	C14
5716	E1
5717	E13
5718	D13
5719	C13
5753	D13
6838	E13
6839	E2
6840	C13
7717	F1
7718	B4
7719	F13
9708	I7
9712	F3
9713	F2
9714	I2
9715	I2
9716	E4
9717	E3
9720	G4
9721	F14
9722	F14
9723	I14
9724	I14
9727	I13
9728	I2
9755	I7
FF40	E2
FF41	C13
FF42	D13
FF43	E14
FF44	I7

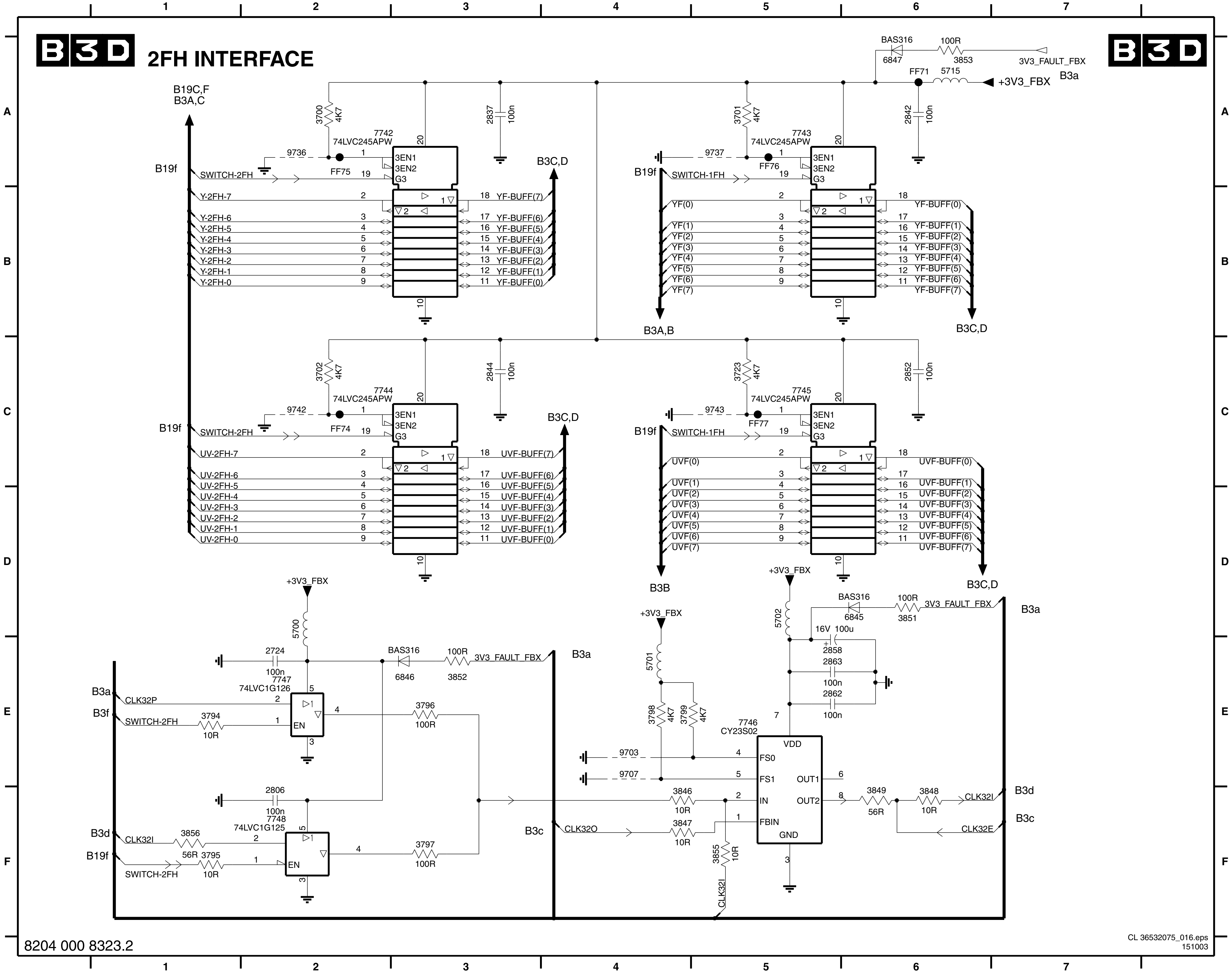
Small Signal Board: Eagle



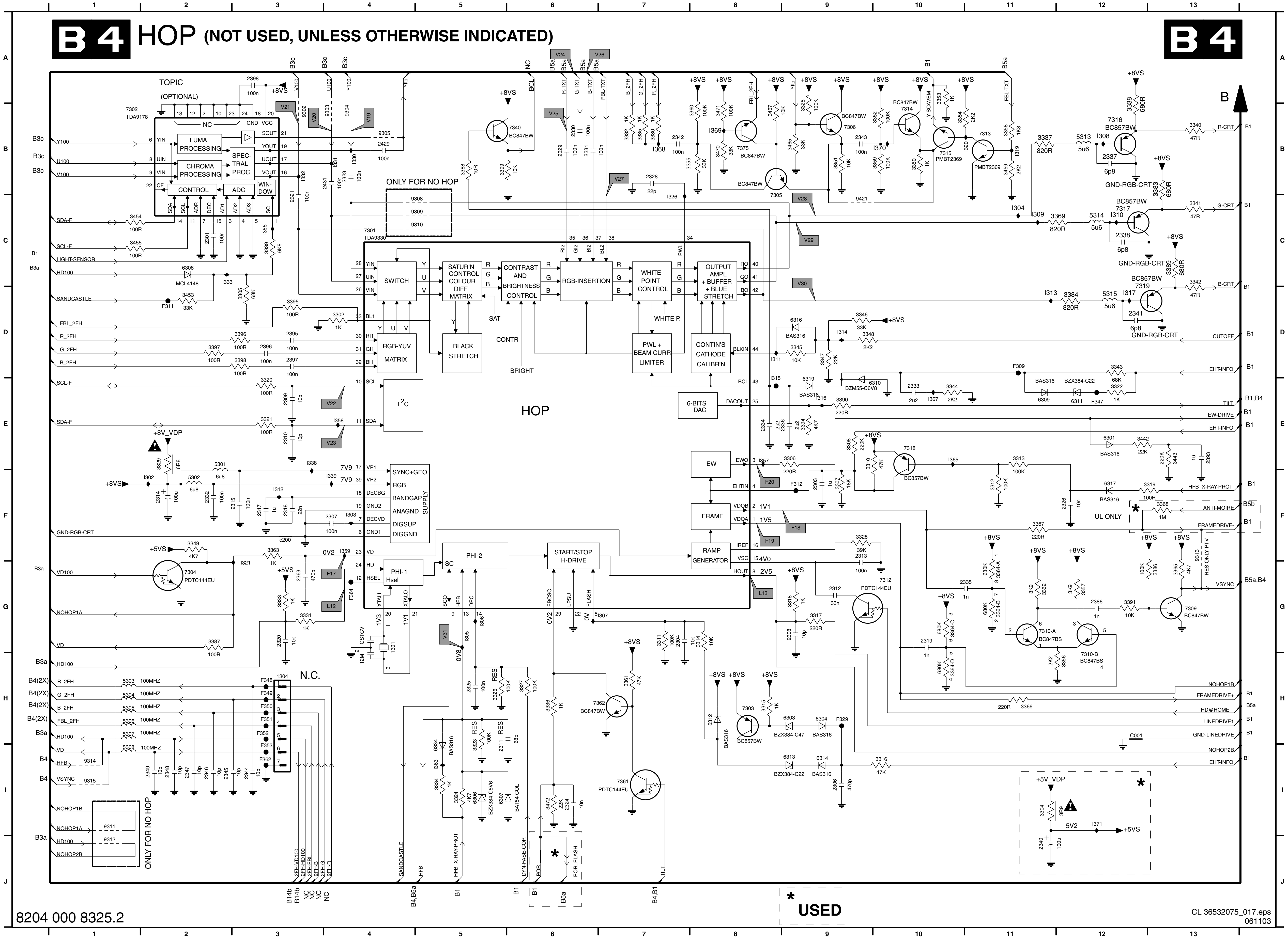
2709	C6
2710	D6
2711	E7
2712	A7
2715	J4
2716	D6
2717	J7
2723	J4
2725	J8
2726	J8
2727	J10
2731	A10
2732	B12
2733	C13
2734	D13
2735	G11
2736	J10
2737	J14
2738	J13
2739	J13
2747	A9
2754	A12
2768	A9
2770	J1
2771	J1
2772	J2
2783	I13
2803	G14
2804	F14
2805	G13
2807	B13
2808	B12
2809	E4
2810	B4
2811	E4
2812	F4
2813	B3
2814	I13
2815	J8
2816	J11
2817	C1
2818	J14
2820	E2
2821	E3
2822	E3
2825	D5
2826	F4
2827	I7
2828	I12
2829	F3
2830	I12
2832	F4
2833	G5
2835	I4
2838	I3
2839	J7
2840	J10
2841	J13
2843	H1
2845	C5
2846	C5
2847	A12
2848	B7
2849	I8
2850	I11
2851	A11
2853	F12
2854	E12
2855	F7
2856	I14
2857	F12
2859	G10
2860	G11
2861	B7
2864	D13
2865	E12
2866	G10
2867	F7
2880	G13
2884	E14
2885	J11
2886	G8
2887	G7
2888	G7
2889	G8
2890	G9
2891	G10
2892	G7
2893	H8
2894	H9
2895	H10
2896	H9
2897	H9
2898	H7
3711	F7
3731	I7
3732	I10
3733	I13
3744	A6
3745	B6
3771	I5
3772	I5
3785	I6
3786	I9
3787	I12
3788	I7
3789	I10
3790	I13
3791	I8
3792	C13
3793	A6
3800	G8
3801	H10
3802	G8
3803	G8
3804	C13
3805	I11
3806	I14
3807	I7
3808	J10
3809	I13
3810	J7
3811	J8
3812	J9
3813	J10
3814	J11
3815	J12
3816	J13
3817	J14
3818	J14
3819	G12
3820	G12
3821	H8
3822	H7
3823	H8
3824	H7
3825	G7
3826	G7
3827	G7
3828	I5
3829	A9
3841	E5
3842	E5
3843	J1
3844	F13
5705	H13
5721	A13
5722	F14
5724	F13
5725	F14
5726	F4
5727	E4
5728	E13
5739	I8
5740	I10
5741	I13
5742	J1
5743	J3
5748	A13
5750	F14
5751	F14
5752	J3
5757	D13
5760	I8
5761	I10
5762	I14
6841	E4
6842	E5
6843	J1
6844	F13
7722	B2
7723	G2
7724	B8
7725	A6
7727	J2
7728	I7
7729	I9
7730	I13
7731	J6
7732	J9
7733	J12
9709	J5
9740	I6
9744	C13
9745	C14
9746	C13
9747	C14
9750	I5
9753	E7
9754	A8
9756	J5
9757	J5
9758	J5
9759	J5
9762	B3
9763	D3
9764	F3
9765	I3
9766	H10
9770	A8
9771	A8
AF01	I11
AF02	I14
AF03	I8
AF10	I9
AF11	I12
AF12	I14
AF14	B9
FF50	B13
FF51	F14
FF53	F14
FF54	J4
FF55	E14
FF56	E4
FF57	J2
FF58	F5
FF61	G13
FF62	D8
FF63	D7
FF64	G12
IF51	A8
IF52	A8
IF53	A8
IF54	A8
IF55	A8
IF56	A8
IF57	B9
IF58	A1
IF59	A8
IF61	B5
IF63	D5
IF64	E1
IF65	F1
IF66	H13
IF67	H5
IF68	I7
IF69	I10
IF70	I13
IF71	I1
IF72	A6
IF75	F5
IF76	J7
IF77	G11
IF78	J13
IF82	D12

Small Signal Board: 2FH Interface

2724 E2	2842 A6	2858 E5	3700 A2	3723 C5	3796 E3	3799 E4	3848 F6	3852 E3	3856 F1	5702 D5	6846 E3	7743 A5	7746 E5	9703 E4	9737 A5	9742 C2	9749 C5	FF75 A2
2806 F2	2844 C3	2862 E5	3701 A5	3794 E1	3797 F3	3846 F4	3849 F6	3853 A6	5700 D2	5715 A6	6847 A6	7744 C3	7747 E2	9707 E4	9738 A2	9743 C5	FF71 A6	FF76 A5
2837 A3	2852 C6	2863 E5	3702 C2	3795 F1	3798 E4	3847 F4	3851 D6	3855 F5	5701 E4	6845 D6	7742 A3	7745 C5	7748 F2	9736 A2	9739 A5	9748 C2	FF74 C2	FF77 C5


B3D
2FH INTERFACE
B3D
B19C,F
B3A,C
B19f
SWITCH-2FH
Y-2FH-7
Y-2FH-6
Y-2FH-5
Y-2FH-4
Y-2FH-3
Y-2FH-2
Y-2FH-1
Y-2FH-0
3700 4K7
7742 74LVC245APW
9736
FF75
2837 100n
B3C,D
YF-BUFF(7)
YF-BUFF(6)
YF-BUFF(5)
YF-BUFF(4)
YF-BUFF(3)
YF-BUFF(2)
YF-BUFF(1)
YF-BUFF(0)
3EN1
3EN2
G3
BAS316
6847
100R
3853
3V3_FAULT_FBX
FF71
5715
+3V3_FBX
B3a
3701 4K7
7743 74LVC245APW
9737
FF76
SWITCH-1FH
2842 100n
YF(0)
YF(1)
YF(2)
YF(3)
YF(4)
YF(5)
YF(6)
YF(7)
B3A,B
B3C,D
3702 4K7
7744 74LVC245APW
9742
FF74
2844 100n
UV-2FH-7
UV-2FH-6
UV-2FH-5
UV-2FH-4
UV-2FH-3
UV-2FH-2
UV-2FH-1
UV-2FH-0
UVF-BUFF(7)
UVF-BUFF(6)
UVF-BUFF(5)
UVF-BUFF(4)
UVF-BUFF(3)
UVF-BUFF(2)
UVF-BUFF(1)
UVF-BUFF(0)
3723 4K7
7745 74LVC245APW
9743
FF77
2852 100n
UVF(0)
UVF(1)
UVF(2)
UVF(3)
UVF(4)
UVF(5)
UVF(6)
UVF(7)
B3B
B3C,D
+3V3_FBX
5700
2724 100n
7747 74LVC1G126
BAS316 6846
100R 3852
3V3_FAULT_FBX
B3a
B3a CLK32P
B3f SWITCH-2FH
3794 10R
3796 100R
EN
2806 100n
7748 74LVC1G125
B3d CLK32I
3856 56R
B19f
3795 10R
SWITCH-2FH
3797 100R
B3c
CLK32O
+3V3_FBX
5701
3798 4K7
3799 4K7
9703
9707
3846 10R
3847 10R
3855 10R
CLK32I
+3V3_FBX
5702
BAS316 6845
100R 3851
3V3_FAULT_FBX
B3a
16V 100u
2858
2863 100n
2862 100n
7746 CY23S02
VDD
FS0
FS1
IN
FBIN
GND
OUT1
OUT2
3849 56R
3848 10R
CLK32I
B3d
CLK32E
B3c
8204 000 8323.2
CL 36532075_016.eps
151003

Small Signal Board: HOP

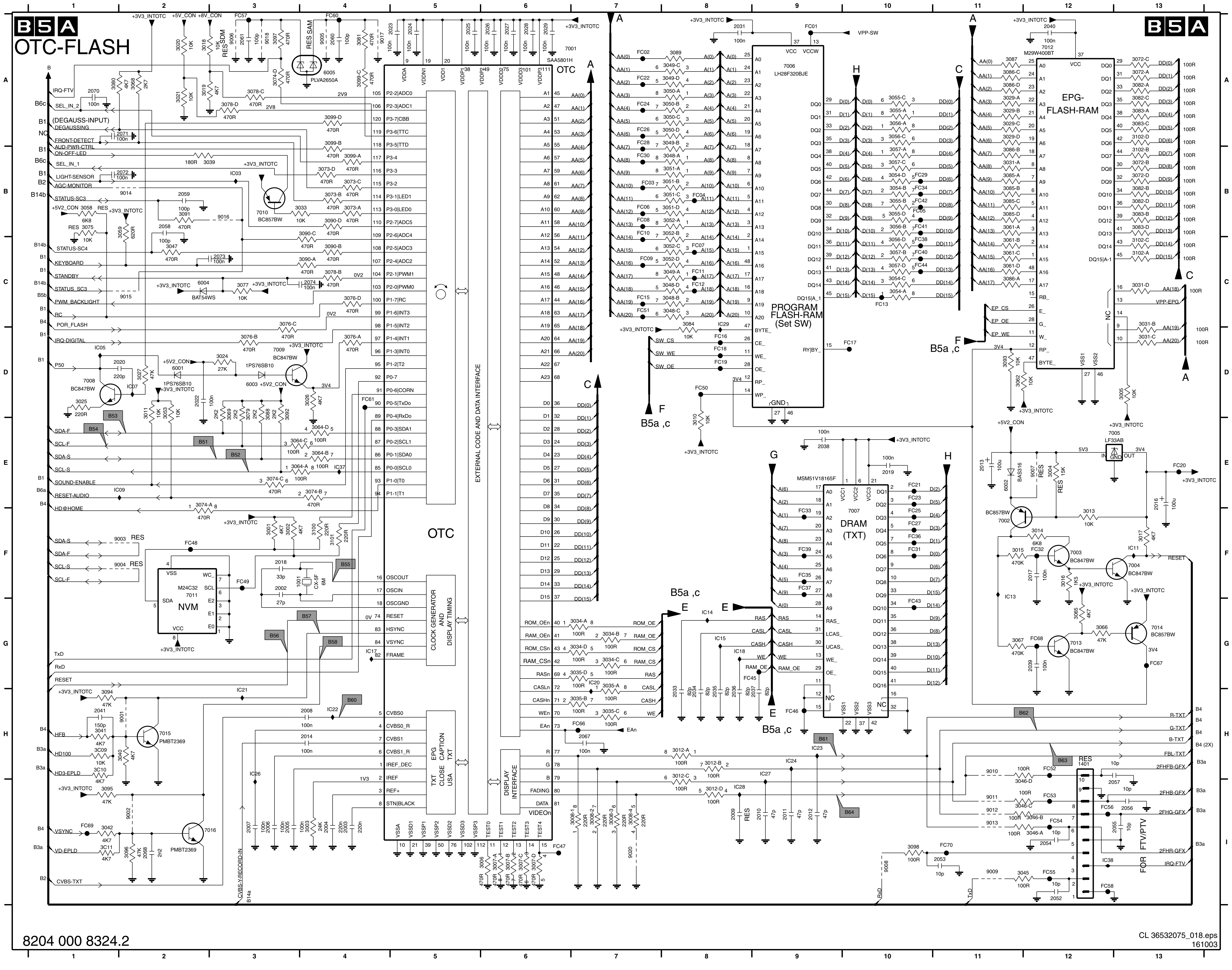

B 4
HOP (NOT USED, UNLESS OTHERWISE INDICATED)
B 4
TOPIC
(OPTIONAL)
7302
TDA9178
LUMA PROCESSING
CHROMA PROCESSING
SPEC-TRAL PROC
CONTROL
ADC
WIN-DOW
ONLY FOR NO HOP
7301
TDA9330
SWITCH
SATUR'N CONTROL COLOUR DIFF MATRIX
CONTRAST AND BRIGHTNESS CONTROL
RGB-INSERTION
WHITE POINT CONTROL
OUTPUT AMPL + BUFFER + BLUE STRETCH
RGB-YUV MATRIX
BLACK STRETCH
PWL + BEAM CURR LIMITER
CONTIN'S CATHODE CALIBR'N
I²C
HOP
6-BITS DAC
EW
FRAME
RAMP GENERATOR
SYNC+GEO
RGB
BANDGAP
ANAGND
DIGSUP
DIGGND
SUPPLY
PHI-1 Hsel
PHI-2
START/STOP H-DRIVE
N.C.
UL ONLY
ONLY FOR NO HOP
+5V_VDP
5V2
+5VS
USED
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I J

8204 000 8325.2

CL 36532075_017.eps
061103

1301	G4
1304	H3
2301	C2
2303	F9
2304	G7
2306	I9
2307	F4
2308	G9
2309	E3
2310	E3
2311	I5
2312	G9
2313	F9
2314	F2
2315	F3
2317	F3
2318	F3
2319	G10
2320	G3
2321	C3
2323	B4
2324	I6
2325	H5
2326	F12
2328	B7
2329	B6
2330	B6
2331	B6
2332	F2
2333	E10
2334	E8
2335	G11
2336	E9
2337	B12
2338	C12
2340	J11
2341	D12
2342	B7
2343	B9
2344	I3
2345	I2
2346	I2
2347	I2
2348	I2
2349	I2
2363	G3
2386	G12
2393	E13
2395	D3
2396	D3
2397	D3
2398	A3
2429	B4
2431	B4
3302	D4
3304	I11
3305	D3
3306	E9
3307	F9
3308	E9
3310	E9
3311	G7
3312	F11
3313	E11
3314	G8
3315	H8
3316	I10
3317	G9
3318	G9
3319	F13
3320	E3
3321	E3
3322	E12
3323	I5
3324	I5
3325	B9
3326	H5
3327	H6
3328	F9
3329	E2
3330	B7
3331	G3
3332	B7
3333	G3
3334	I5
3335	B7
3336	H6
3337	B11
3338	B12
3339	C3
3340	B13
3341	C13
3342	C13
3343	D12
3344	E10
3345	D9
3346	D9
3347	D9
3348	D9
3349	F2
3350	B10
3351	B9
3352	B10
3353	A10
3354	B10
3355	B7
3356	H12
3357	G12
3358	B11
3359	B10
3360	B8
3361	H7
3362	G11
3363	F3
3364-A	G11
3364-B	G11
3364-C	G10
3364-D	H10
3365	G13
3366	H11
3367	F11
3368	F13
3369	C12
3383	B13
3384	D12
3386	G13
3387	G2
3388	B5
3389	C13
3390	E9
3391	G12
3394	E9
3395	D3
3396	D3
3397	D2
3398	D3
3399	B5
3442	E12
3443	E13
3453	D2
3454	C1
3455	C1
3459	B11
3465	B9
3467	B8
3470	B8
3471	B8
3472	I6
5301	E2
5302	F2
5303	H1
5304	H1
5305	H1
5306	H1
5307	H1
5308	I1
5313	B12
5314	C12
5315	D12
6301	E12
6303	H9
6304	H9
6306	I5
6307	I5
6308	C2
6309	E11
6310	E10
6311	E12
6312	H8
6313	I9
6314	I9
6316	D9
6317	F12
6319	E9
6334	I5
7301	C4
7302	B1
7303	H8
7304	G2
7305	C9
7306	B9
7309	G13
7310-A	G11
7310-B	H12
7312	G10
7313	B11
7314	B10
7315	B10
7316	B12
7317	C12
7318	E10
7319	C12
7340	B6
7361	I7
7362	H7
7375	B8
9302	B3
9303	B4
9304	B4
9305	B4
9308	C5
9309	C5
9310	C5
9311	I1
9312	J1
9313	F13
9314	I1
9315	I1
9421	C9
C001	H12
F309	D11
F311	D2
F312	F9
F329	H9
F347	E12
F348	H3
F349	H3
F350	H3
F351	H3
F352	H3
F353	I3
F362	I3
F364	G4
I302	F2
I303	F4
I304	B12
I305	G5
I306	G5
I307	G7
I308	B12
I309	C12
I310	C12
I311	D8
I312	F3
I313	D12
I314	D9
I315	D8
I316	E9
I317	D12
I319	B11
I320	B11
I321	G3
I326	C7
I330	B4
I331	B4
I332	B3
I333	C2
I338	E3
I339	F4
I357	E8
I358	E4
I359	F4
I363	I5
I365	E10
I366	C3
I367	E10
I368	B7
I369	B8
I370	B10
I371	I12
c200	F3

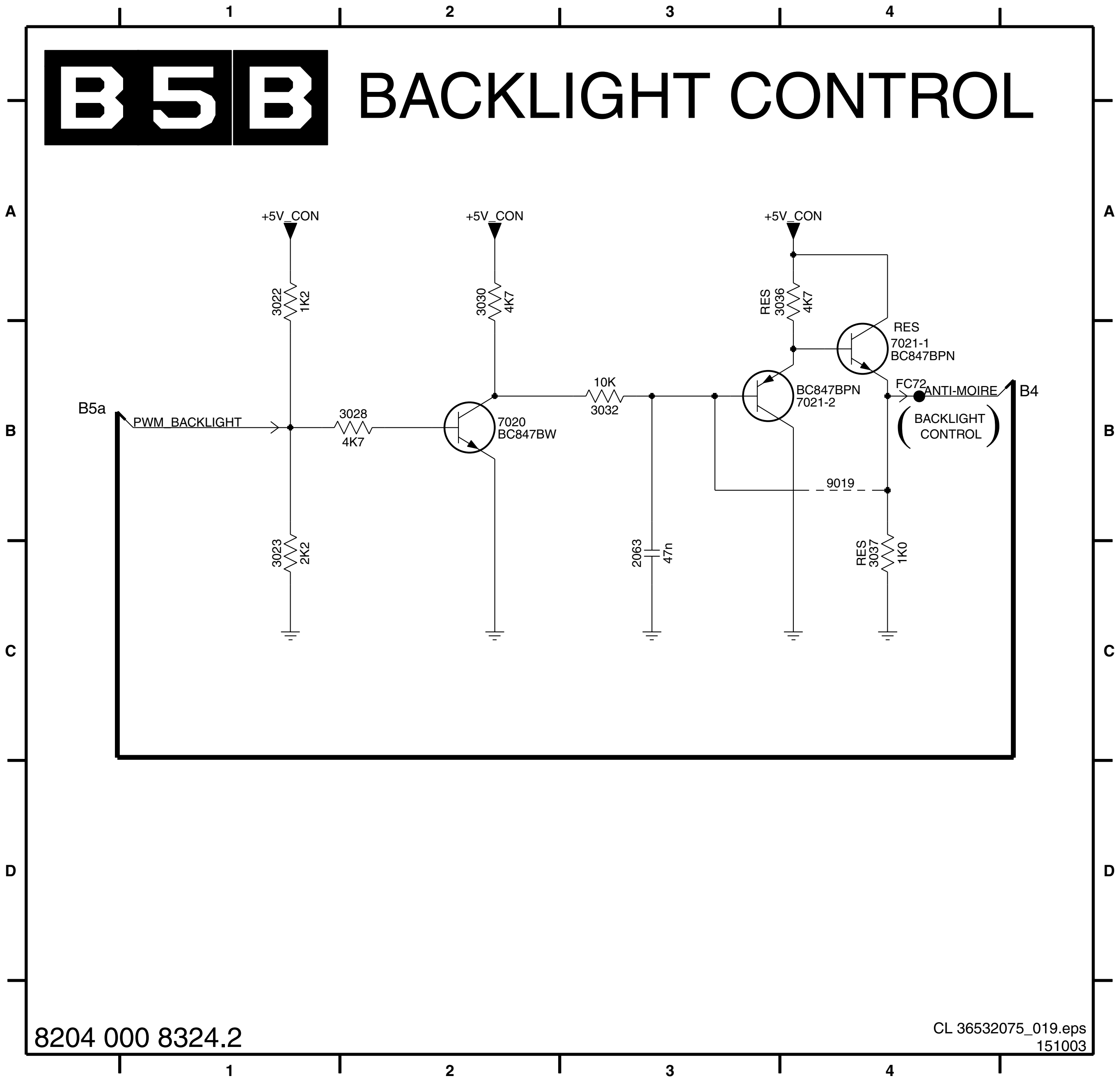
Small Signal Board: OTC-Flash


B5A
OTC-FLASH
OTC
SAA5801H
7001
EXTERNAL CODE AND DATA INTERFACE
CLOCK GENERATOR AND DISPLAY TIMING
EPG CAPTION TXT
TXT CLOSE CAPTION USA
DISPLAY INTERFACE
NVM
M24C32
7011
7006
LH28F320BJE
PROGRAM FLASH-RAM (Set SW)
7012
M29W400BT
EPG-FLASH-RAM
MSM51V18165F
7007
DRAM (TXT)
7005
LF33AB
1401
FTV/PTV
FOR
IRQ-FTV
SEL_IN_2
(DEGAUSS-INPUT)
DEGAUSSING
FRONT-DETECT
AUD-PWR-CTRL
ON-OFF-LED
SEL_IN_1
LIGHT-SENSOR
AGC-MONITOR
STATUS-SC3
STATUS-SC4
KEYBOARD
STANDBY
STATUS_SC3
PWM_BACKLIGHT
RC
POR_FLASH
IRQ-DIGITAL
P50
SDA-F
SCL-F
SDA-S
SCL-S
SOUND-ENABLE
RESET-AUDIO
HD@HOME
TxD
RxD
RESET
HFB
HD100
HD3-EPLD
VSYNC
VD-EPLD
CVBS-TXT
CVBS-Y-RECORD-IN
R-TXT
G-TXT
B-TXT
FBL-TXT
2FHFB-GFX
2FHB-GFX
2FHG-GFX
2FHR-GFX
IRQ-FTV
VPP-SW
VPP-EPG
+3V3_INTOTC
+5V_CON
+8V_CON
7010 BC857BW
7008 BC847BW
7009 BC847BW
7015 PMBT2369
7016 PMBT2369
7002 BC857BW
7003 BC847BW
7004 BC847BW
7013 BC847BW
7014 BC857BW
6005 PLVA2650A
6001 1PS76SB10
6003 1PS76SB10
6004 BAT54WS
6002 BAS316
1001 CX-5F 6M
B5a ,c
8204 000 8324.2
CL 36532075_018.eps
161003

1001	F4
1401	H12
2002	F3
2003	I4
2004	I4
2005	I3
2006	I3
2007	I3
2008	H4
2009	I8
2010	I9
2011	I9
2012	I9
2013	E11
2014	H4
2016	E13
2017	F12
2018	F3
2019	E10
2020	D2
2022	D2
2023	A5
2024	A5
2025	A5
2026	A6
2027	A6
2028	A6
2029	A6
2031	A8
2033	H8
2034	H8
2035	H8
2036	H8
2037	H9
2038	E9
2039	G12
2040	A12
2041	H1
2052	I12
2053	I11
2054	I12
2055	I13
2056	I13
2057	I13
2058	B2
2059	B2
2060	A4
2061	A3
2067	H7
2068	I2
2070	A1
2071	A2
2072	B2
2073	C3
2074	C4
3001	F3
3002	F3
3003	I4
3004	E12
3005	D13
3006	I6
3007-A	I6
3007-B	I6
3007-C	I6
3007-D	I6
3008-A	I7
3008-B	I7
3008-C	I7
3008-D	I7
3010	E8
3011	D2
3012-A	H8
3012-B	H8
3012-C	H8
3012-D	I8
3013	F12
3014	F12
3015	F11
3016	F12
3017	F13
3018	A2
3019	A2
3020	A2
3021	A2
3024	D3
3025	D1
3026	D4
3027	D2
3029-A	A11
3029-B	A11
3029-C	A11
3029-D	A11
3031-A	B11
3031-B	C13
3031-C	D13
3031-D	C13
3033	B4
3034-A	G7
3034-B	G7
3034-C	G7
3034-D	G7
3035-A	G7
3035-B	H7
3035-C	H7
3035-D	G7
3039	B2
3040	H2
3041	H1
3042	I1
3045	I12
3046-A	I12
3046-B	I12
3046-C	I12
3046-D	I12
3047	C2
3048-A	B8
3048-B	C8
3048-C	C8
3048-D	C8
3049-A	C8
3049-B	A8
3049-C	A8
3049-D	A8
3050-A	A8
3050-B	A8
3050-C	A8
3050-D	A8
3051-A	B8
3051-B	B8
3051-C	B8
3051-D	B8
3052-A	B8
3052-B	B8
3052-C	C8
3052-D	C8
3053	D2
3054-A	C10
3054-B	B10
3054-C	C10
3054-D	B10
3055-A	A10
3055-B	B10
3055-C	A10
3055-D	B10
3056-A	A10
3056-B	B10
3056-C	A10
3056-D	C10
3057-A	B10
3057-B	C10
3057-C	B10
3057-D	C10
3058	B1
3059	B2
3061-A	B11
3061-B	C11
3061-C	C11
3061-D	C11
3062	D11
3064-A	E3
3064-B	E4
3064-C	E3
3064-D	E4
3065	G12
3066	G12
3067	G11
3068	A2
3069	D3
3072-A	A13
3072-B	B13
3072-C	A13
3072-D	B13
3073-A	B4
3073-B	B4
3073-C	B4
3073-D	B4
3074-A	E2
3074-B	E4
3074-C	E3
3074-D	A3
3075	B1
3076-A	D4
3076-B	D3
3076-C	C3
3076-D	C4
3077	C3
3078-B	C4
3078-C	A3
3078-D	A3
3079	D3
3080	A1
3081	A4
3082-A	A13
3082-B	B13
3082-C	A13
3082-D	B13
3083-A	A13
3083-B	B13
3083-C	A13
3083-D	B13
3084	C8
3085-A	B11
3085-B	B11
3085-C	B11
3085-D	B11
3086-A	C11
3086-B	B11
3086-C	A11
3086-D	A11
3087	A11
3088	D3
3089	A8
3090-A	C4
3090-B	C4
3090-C	B4
3090-D	B4
3091	B2
3092	D3
3093	D11
3094	H1
3095	I1
3096	I2
3097	A3
3098	I10
3099-A	B4
3099-B	A4
3099-C	A4
3099-D	A4
3100	F4
3101	F4
3102-A	C13
3102-B	B13
3102-C	C13
3102-D	A13
3C09	H1
3C10	H1
3C11	I1
6001	D2
6002	E11
6003	D3
6004	C2
6005	A4
7001	A6
7002	F11
7003	F12
7004	F13
7005	E13
7006	A9
7007	F10
7008	D1
7009	D3
7010	B3
7011	F2
7012	A12
7013	G12
7014	G13
7015	H2
7016	I2
9001	H2
9002	I2
9003	F2
9004	F2
9005	A4
9006	A3
9007	E12
9008	I10
9009	I11
9010	H11
9011	I11
9012	I11
9013	I11
9014	B2
9015	C2
9016	B3
9017	A4
9018	A3
9020	I7
FC01	A9
FC02	A7
FC03	B7
FC04	B8
FC05	B10
FC06	B7
FC07	C8
FC08	B7
FC09	C7
FC10	B7
FC11	C8
FC12	C8
FC13	C10
FC15	C7
FC16	D8
FC17	D10
FC18	D8
FC19	D8
FC20	E13
FC21	E10
FC22	A7
FC23	E10
FC24	A7
FC25	F10
FC26	A7
FC27	F10
FC28	A7
FC29	B10
FC30	B7
FC31	F10
FC32	F12
FC33	F9
FC34	B10
FC35	F9
FC36	F10
FC37	F9
FC38	C10
FC39	F9
FC40	C10
FC41	B10
FC42	B10
FC43	G10
FC44	C10
FC45	G8
FC46	H9
FC47	I6
FC48	F2
FC49	F3
FC50	D8
FC51	C7
FC52	H12
FC53	I12
FC54	I12
FC55	I12
FC56	I12
FC57	A3
FC58	I12
FC60	A4
FC61	D4
FC66	H7
FC67	G13
FC68	G12
FC69	I1
FC70	I11
IC03	B3
IC05	D1
IC07	D2
IC09	E2
IC11	F13
IC13	F11
IC14	G8
IC15	G8
IC17	G4
IC18	G8
IC20	G7
IC21	H3
IC22	H4
IC23	H9
IC24	H9
IC26	H3
IC27	H9
IC28	I8
IC29	C8
IC37	E4
IC38	I12

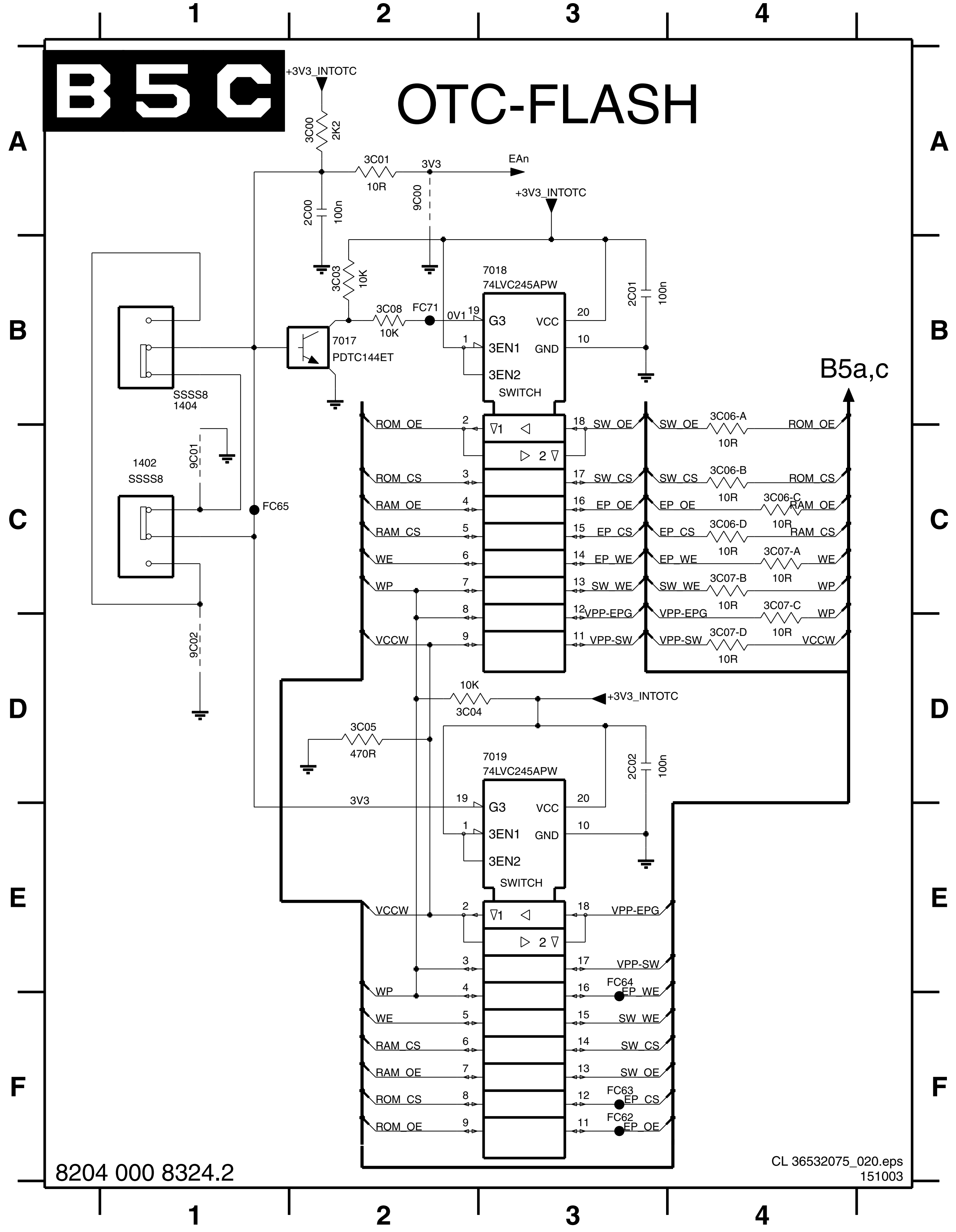
Small Signal Board: Backlight Control

2063 C3	3023 C1	3030 A2	3036 A4	7020 B2	7021-2 B4
3022 A1	3028 B2	3032 B3	3037 C4	7021-1 B4	9019 B4

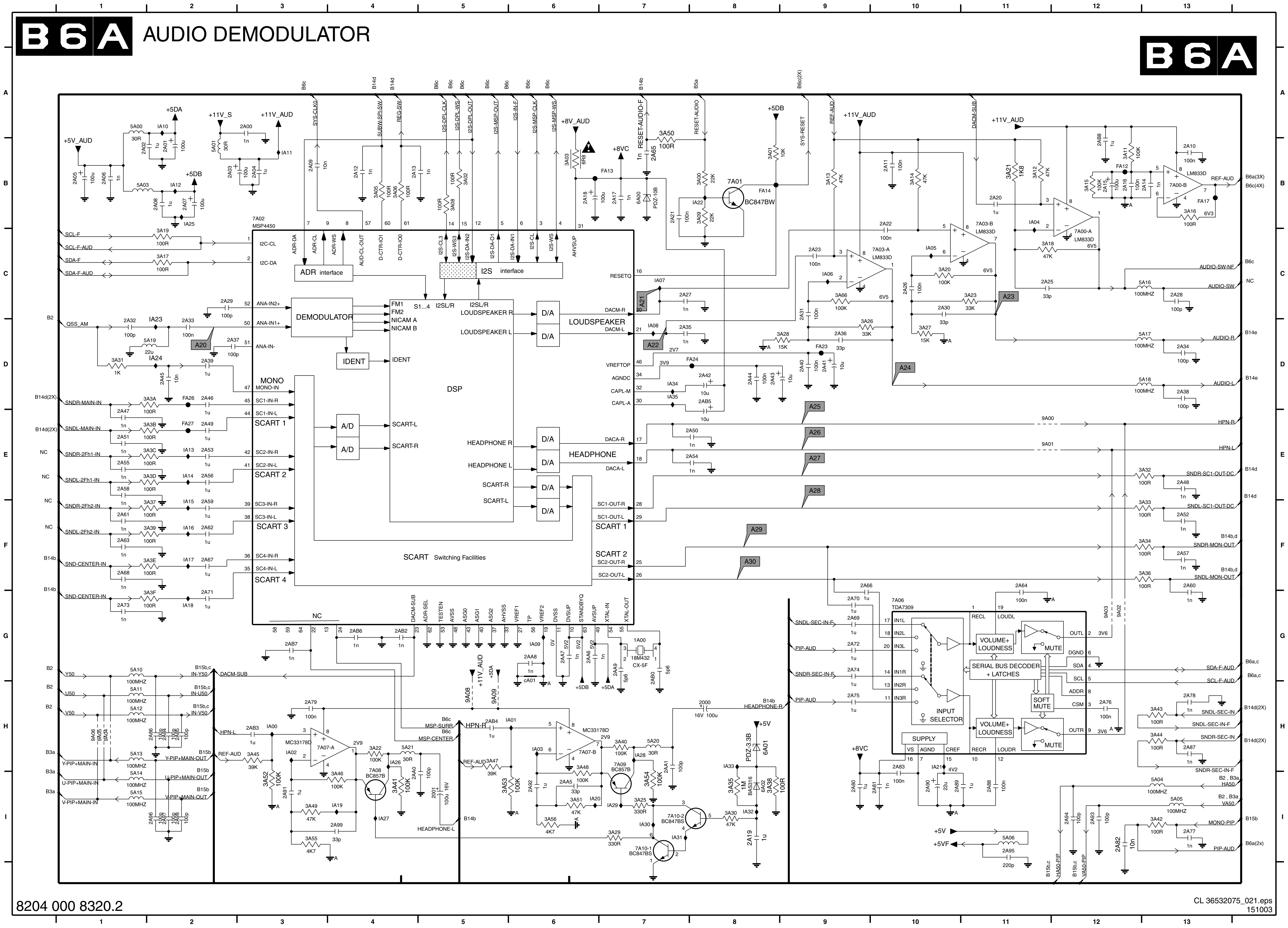

B5B BACKLIGHT CONTROL
1
2
3
4
A
B
C
D
+5V_CON
3022 1K2
3023 2K2
3028 4K7
3030 4K7
7020 BC847BW
10K 3032
2063 47n
RES 3036 4K7
RES 7021-1 BC847BPN
BC847BPN 7021-2
9019
RES 3037 1K0
FC72
ANTI-MOIRE
B4
B5a
PWM_BACKLIGHT
BACKLIGHT CONTROL
8204 000 8324.2
CL 36532075_019.eps
151003

Small Signal Board: OTC-Flash

1402 C1	2C01 B3	3C01 A2	3C05 D2	3C06-C C4	3C07-B C4	3C08 B2	7019 D3	9C02 D1	FC64 E3
1404 B1	2C02 D3	3C03 B2	3C06-A B4	3C06-D C4	3C07-C C4	7017 B2	9C00 A2	FC62 F3	FC65 C1
2C00 A2	3C00 A2	3C04 D2	3C06-B C4	3C07-A C4	3C07-D D4	7018 B3	9C01 C1	FC63 F3	FC71 B2

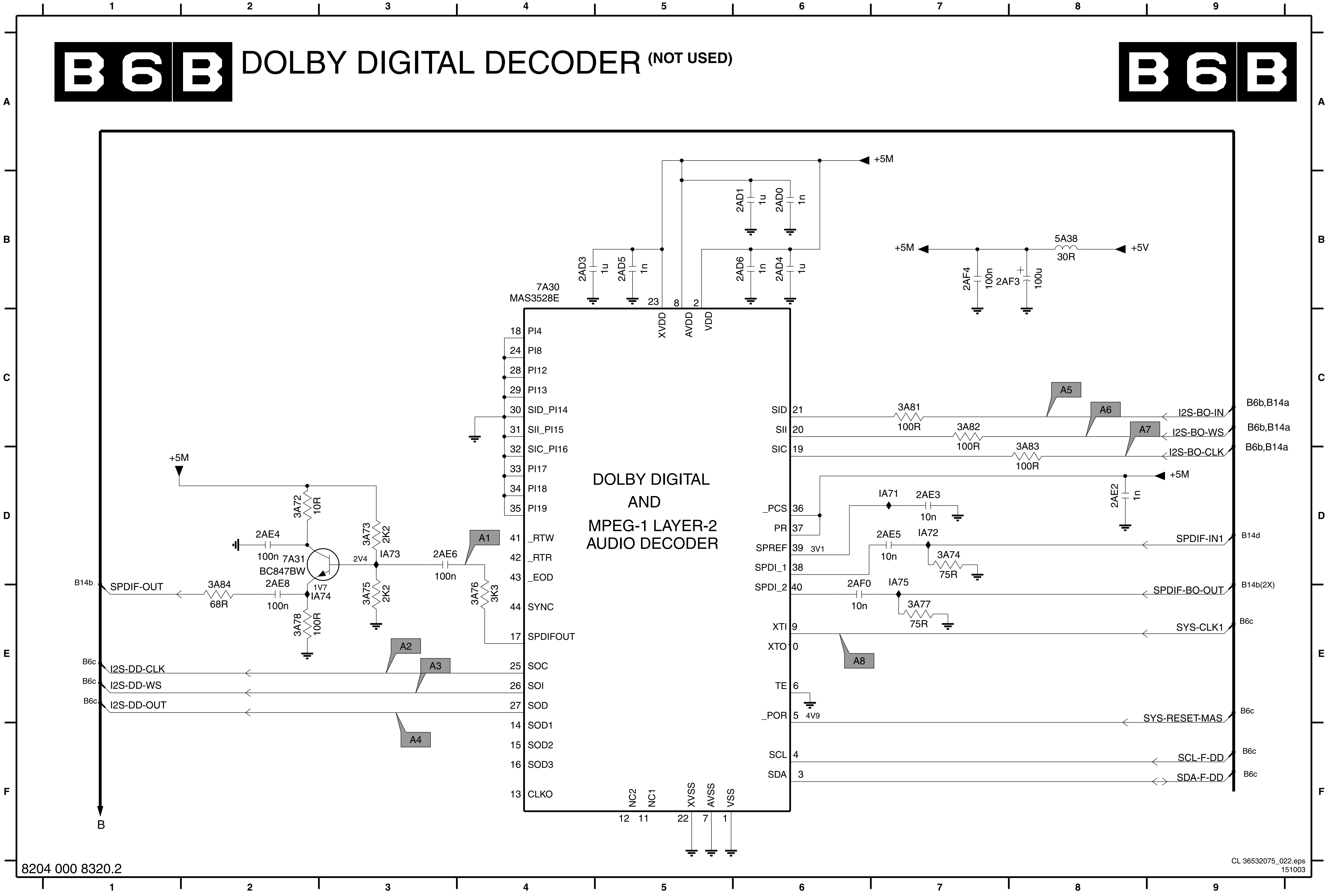

B5C OTC-FLASH
1
2
3
4
A
B
C
D
E
F
+3V3_INTOTC
3C00 2K2
3C01 10R
3V3
EAn
2C00 100n
9C00
3C03 10K
3C08 10K
FC71
0V1
7017 PDTC144ET
7018 74LVC245APW
G3
3EN1
3EN2
SWITCH
VCC
GND
2C01 100n
B5a,c
SSSS8 1404
1402 SSSS8
9C01
FC65
9C02
ROM_OE
ROM_CS
RAM_OE
RAM_CS
WE
WP
VCCW
SW_OE
SW_CS
EP_OE
EP_CS
EP_WE
SW_WE
VPP-EPG
VPP-SW
3C06-A 10R
3C06-B 10R
3C06-C 10R
3C06-D 10R
3C07-A 10R
3C07-B 10R
3C07-C 10R
3C07-D 10R
10K 3C04
3C05 470R
7019 74LVC245APW
2C02 100n
FC64
FC63
FC62
8204 000 8324.2
CL 36532075_020.eps
151003

Small Signal Board: Audio Demodulator


B6A
AUDIO DEMODULATOR
B6A
7A02
MSP4450
DEMODULATOR
IDENT
DSP
ADR interface
I2S interface
D/A
A/D
LOUDSPEAKER
HEADPHONE
SCART 1
SCART 2
SCART 3
SCART 4
SCART Switching Facilities
MONO
NC
7A06
TDA7309
VOLUME+ LOUDNESS
MUTE
SERIAL BUS DECODER + LATCHES
SOFT MUTE
INPUT SELECTOR
SUPPLY
7A00-A LM833D
7A00-B LM833D
7A03-A LM833D
7A03-B LM833D
7A01 BC847BW
7A07-A MC33178D
7A07-B MC33178D
7A08 BC857B
7A09 BC857B
7A10-1 BC847BS
7A10-2 BC847BS
1A00 18M432 CX-5F
+5V_AUD
+5DA
+5DB
+11V_S
+11V_AUD
+8V_AUD
+8VC
+5V
+5VF
SCL-F
SCL-F-AUD
SDA-F
SDA-F-AUD
QSS_AM
SNDR-MAIN-IN
SNDL-MAIN-IN
SNDR-2Fh1-IN
SNDL-2Fh1-IN
SNDR-2Fh2-IN
SNDL-2Fh2-IN
SND-CENTER-IN
Y50
U50
V50
Y-PIP+MAIN-IN
U-PIP+MAIN-IN
V-PIP+MAIN-IN
DACM-SUB
HPN-L
HPN-R
REF-AUD
MSP-SURR
MSP-CENTER
HEADPHONE-L
HEADPHONE-R
REF-AUD
AUDIO-SW-NF
AUDIO-SW
AUDIO-R
AUDIO-L
HPN-R
HPN-L
SNDR-SC1-OUT-DC
SNDL-SC1-OUT-DC
SNDR-MON-OUT
SNDL-MON-OUT
SNDL-SEC-IN-F
PIP-AUD
SNDR-SEC-IN-F
SDA-F-AUD
SCL-F-AUD
SNDL-SEC-IN
SNDL-SEC-IN-F
SNDR-SEC-IN
SNDR-SEC-IN-F
HA50
VA50
MONO-PIP
PIP-AUD
A20
A21
A22
A23
A24
A25
A26
A27
A28
A29
A30
8204 000 8320.2
CL 36532075_021.eps
151003

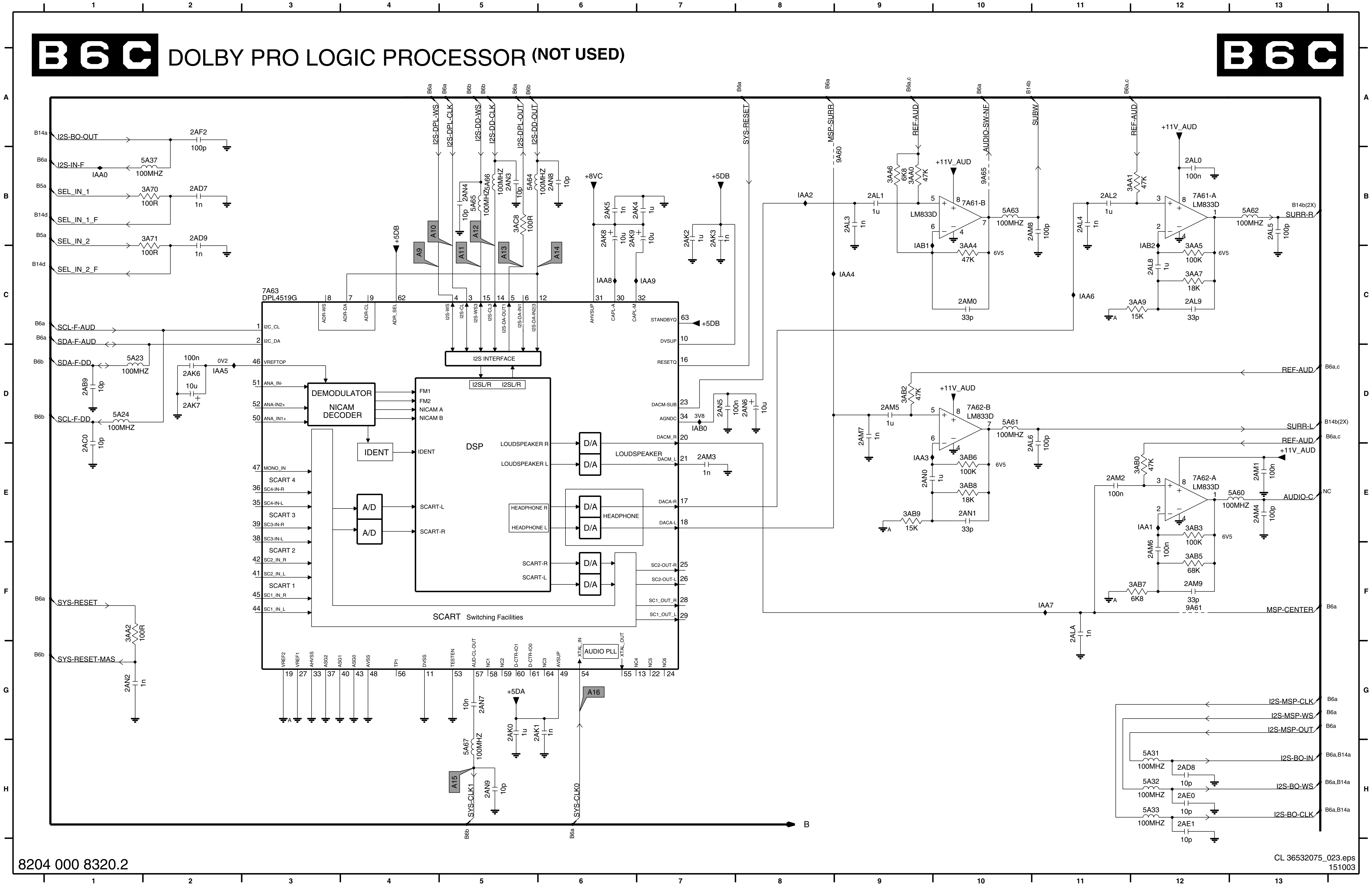
1A00	G7
2A00	A3
2A01	B2
2A02	B1
2A03	B2
2A04	B3
2A05	B1
2A06	B1
2A07	B2
2A08	B2
2A09	B3
2A10	B13
2A11	B10
2A12	B4
2A13	B4
2A14	B13
2A15	B12
2A16	B12
2A17	B7
2A18	B6
2A19	I8
2A20	B11
2A21	B7
2A22	B10
2A23	C9
2A25	C11
2A26	C10
2A27	C7
2A28	C13
2A29	C2
2A30	C10
2A31	C9
2A32	D1
2A33	D2
2A34	D13
2A35	D7
2A36	D9
2A37	D2
2A38	D13
2A39	D2
2A40	D9
2A41	D9
2A42	D8
2A43	D8
2A44	D8
2A45	D2
2A46	D2
2A47	E1
2A48	E13
2A49	E2
2A50	E8
2A51	E1
2A52	F13
2A53	E2
2A54	E8
2A55	E1
2A56	E2
2A57	F13
2A58	E1
2A59	F2
2A60	F13
2A61	F1
2A62	F2
2A63	F1
2A64	F11
2A65	B7
2A66	F9
2A67	F2
2A68	F1
2A69	G9
2A70	G9
2A71	G2
2A72	G9
2A73	G1
2A74	G9
2A75	H9
2A76	H12
2A77	I13
2A78	H13
2A79	H3
2A80	I9
2A81	I10
2A82	I12
2A83	H10
2A84	H2
2A85	H2
2A86	H2
2A87	H13
2A88	I11
2A89	I10
2A90	I10
2A91	I3
2A92	I6
2A93	I12
2A94	I12
2A95	I11
2A96	I2
2A97	I2
2A98	I2
2A99	I4
2AA0	I5
2AA1	H7
2AA5	I6
2AA6	G6
2AA7	G6
2AA8	G6
2AA9	G7
2AB0	G7
2AB2	G4
2AB3	H3
2AB4	H5
2AB5	D8
2AB6	G4
2AB7	G3
2AB8	B12
3A00	B8
3A01	B8
3A02	B5
3A03	B6
3A05	B4
3A06	B4
3A08	B5
3A09	B8
3A11	B12
3A12	B11
3A13	B9
3A14	B10
3A15	B12
3A16	B13
3A17	C2
3A18	C11
3A19	C2
3A20	C10
3A21	B11
3A22	H4
3A23	C11
3A25	I7
3A26	D9
3A27	D10
3A28	D9
3A29	I7
3A30	I8
3A31	D1
3A32	E13
3A33	F13
3A34	F13
3A35	I8
3A36	F13
3A37	F2
3A38	I8
3A39	F2
3A3A	D2
3A3B	E2
3A3C	E2
3A3D	E2
3A3E	F2
3A3F	G2
3A40	H7
3A41	I4
3A42	I13
3A43	H13
3A44	H13
3A45	H3
3A46	I4
3A47	H5
3A48	H6
3A49	I3
3A50	A7
3A51	I6
3A52	I3
3A53	I5
3A54	I7
3A55	I3
3A56	I6
3A66	C9
5A00	A1
5A01	B2
5A03	B1
5A04	I13
5A05	I13
5A06	I11
5A10	G1
5A11	H1
5A12	H1
5A13	H1
5A14	I1
5A15	I1
5A16	C13
5A17	D13
5A18	D13
5A19	D2
5A20	H7
5A21	H4
6A00	B7
6A01	H8
6A02	I8
7A00-A	C12
7A00-B	B13
7A01	B8
7A02	B3
7A03-A	C10
7A03-B	B11
7A06	G10
7A07-A	H3
7A07-B	H6
7A08	I4
7A09	H7
7A10-1	I7
7A10-2	I7
9A00	E11
9A01	E11
9A02	G12
9A03	G12
9A04	H1
9A05	H1
9A06	H1
9A08	H5
9A09	H5
FA12	B12
FA13	B7
FA14	B8
FA17	B13
FA23	D9
FA24	D8
FA26	D2
FA27	E2
IA00	H3
IA01	H6
IA02	H3
IA03	H6
IA04	B11
IA05	C10
IA06	C9
IA07	C7
IA08	D7
IA09	G6
IA10	A2
IA11	B3
IA12	B2
IA13	E2
IA14	E2
IA15	F2
IA16	F2
IA17	F2
IA18	G2
IA19	I4
IA20	I6
IA21	H10
IA22	B8
IA23	D2
IA24	D2
IA25	B2
IA26	H4
IA27	I4
IA28	H7
IA29	I7
IA30	I7
IA31	I7
IA32	I8
IA33	H8
cA01	H6

Small Signal Board: Dolby Digital Decoder


B6B
DOLBY DIGITAL DECODER (NOT USED)
1 2 3 4 5 6 7 8 9
A B C D E F
7A30
MAS3528E
DOLBY DIGITAL
AND
MPEG-1 LAYER-2
AUDIO DECODER
+5M
+5V
5A38
30R
2AF4 100n
2AF3 100u
2AD0 1n
2AD1 1u
2AD3 1u
2AD5 1n
2AD6 1n
2AD4 1u
XVDD 23
AVDD 8
VDD 2
18 PI4
24 PI8
28 PI12
29 PI13
30 SID_PI14
31 SII_PI15
32 SIC_PI16
33 PI17
34 PI18
35 PI19
41 _RTW
42 _RTR
43 _EOD
44 SYNC
17 SPDIFOUT
25 SOC
26 SOI
27 SOD
14 SOD1
15 SOD2
16 SOD3
13 CLKO
NC2 12
NC1 11
XVSS 22
AVSS 7
VSS 1
SID 21
SII 20
SIC 19
_PCS 36
PR 37
SPREF 39
3V1
SPDI_1 38
SPDI_2 40
XTI 9
XTO 0
TE 6
_POR 5
4V9
SCL 4
SDA 3
3A81 100R
3A82 100R
3A83 100R
A5
A6
A7
I2S-BO-IN
I2S-BO-WS
I2S-BO-CLK
B6b,B14a
2AE2 1n
IA71
2AE3 10n
2AE5 10n
IA72
3A74 75R
2AF0 10n
IA75
3A77 75R
SPDIF-IN1
B14d
SPDIF-BO-OUT
B14b(2X)
SYS-CLK1
B6c
A8
SYS-RESET-MAS
SCL-F-DD
SDA-F-DD
3A72 10R
3A73 2K2
IA73
2V4
2AE4 100n
7A31
BC847BW
1V7
IA74
2AE6 100n
A1
3A75 2K2
3A76 3K3
3A84 68R
2AE8 100n
3A78 100R
SPDIF-OUT
B14b
I2S-DD-CLK
I2S-DD-WS
I2S-DD-OUT
A2
A3
A4
B
8204 000 8320.2
CL 36532075_022.eps
151003

2AD0	B6
2AD1	B6
2AD3	B4
2AD4	B6
2AD5	B5
2AD6	B6
2AE2	D8
2AE3	D7
2AE4	D2
2AE5	D7
2AE6	D3
2AE8	E2
2AF0	E6
2AF3	B7
2AF4	B7
3A72	D2
3A73	D3
3A74	D7
3A75	E3
3A76	E4
3A77	E7
3A78	E2
3A81	C7
3A82	C7
3A83	D8
3A84	E2
5A38	B8
7A30	B4
7A31	D2
IA71	D7
IA72	D7
IA73	D3
IA74	E3
IA75	D7

Small Signal Board: Dolby Pro Logic Processor


B6C
DOLBY PRO LOGIC PROCESSOR (NOT USED)
I2S-BO-OUT
I2S-IN-F
SEL_IN_1
SEL_IN_1_F
SEL_IN_2
SEL_IN_2_F
SCL-F-AUD
SDA-F-AUD
SDA-F-DD
SCL-F-DD
SYS-RESET
SYS-RESET-MAS
I2S-DPL-WS
I2S-DPL-CLK
I2S-DD-WS
I2S-DD-CLK
I2S-DPL-OUT
I2S-DD-OUT
SYS-RESET
MSP-SURR
REF-AUD
AUDIO-SW-NF
SUBW
+11V_AUD
+8VC
+5DB
+5DA
7A63
DPL4519G
DEMODULATOR
NICAM DECODER
IDENT
DSP
I2S INTERFACE
A/D
D/A
LOUDSPEAKER
HEADPHONE
SCART Switching Facilities
AUDIO PLL
7A61-A LM833D
7A61-B LM833D
7A62-A LM833D
7A62-B LM833D
SURR-R
REF-AUD
SURR-L
AUDIO-C
MSP-CENTER
I2S-MSP-CLK
I2S-MSP-WS
I2S-MSP-OUT
I2S-BO-IN
I2S-BO-WS
I2S-BO-CLK
SYS-CLK1
SYS-CLK0
A9
A10
A11
A12
A13
A14
A15
A16

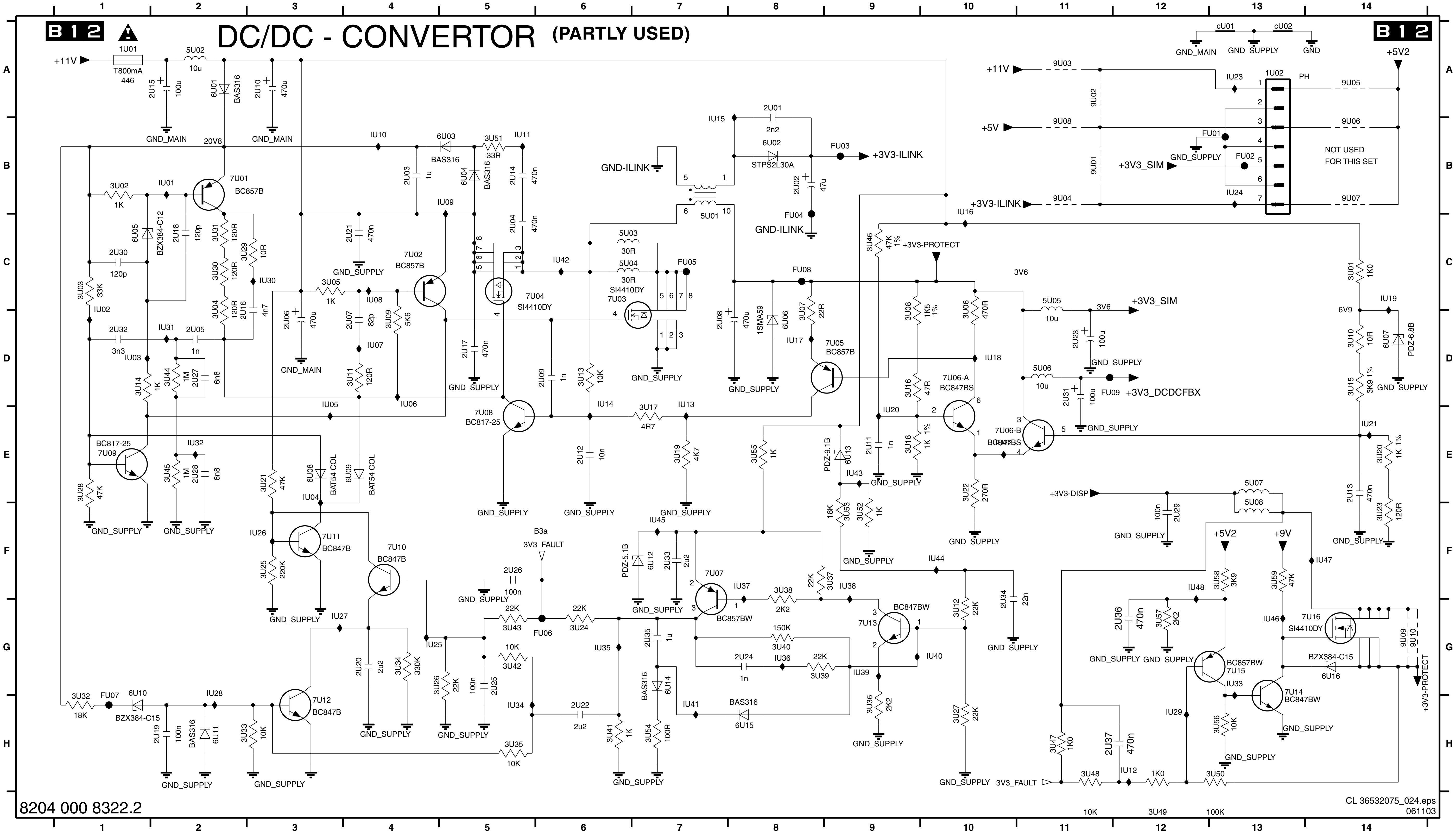
8204 000 8320.2

CL 36532075_023.eps
151003

2AB9 D1	7A61-B B10
2AC0 E1	7A62-A E12
2AD7 B2	7A62-B D10
2AD8 H12	7A63 C3
2AD9 B2	9A60 B9
2AE0 H12	9A61 F12
2AE1 H12	9A65 B10
2AF2 A2	IAA0 B1
2AK0 G5	IAA1 E12
2AK1 G6	IAA2 B8
2AK2 B7	IAA3 E9
2AK3 B7	IAA4 C9
2AK4 B7	IAA5 D2
2AK5 B6	IAA6 C11
2AK6 D2	IAA7 F11
2AK7 D2	IAA8 C6
2AK8 B6	IAA9 C7
2AK9 B6	IAB0 D7
2AL0 B12	IAB1 C9
2AL1 B9	IAB2 C12
2AL2 B11	
2AL3 B9	
2AL4 B11	
2AL5 B13	
2AL6 E11	
2AL8 C12	
2AL9 C12	
2ALA F11	
2AM0 C10	
2AM1 E13	
2AM2 E11	
2AM3 E7	
2AM4 E13	
2AM5 D9	
2AM6 F12	
2AM7 D9	
2AM8 B11	
2AM9 F12	
2AN0 E9	
2AN1 E10	
2AN2 G1	
2AN3 B5	
2AN4 B5	
2AN5 D7	
2AN6 D8	
2AN7 G5	
2AN8 B6	
2AN9 H5	
3A70 B2	
3A71 B2	
3AA0 B9	
3AA1 B12	
3AA2 F1	
3AA4 C10	
3AA5 C12	
3AA6 B9	
3AA7 C12	
3AA9 C12	
3AB0 E12	
3AB2 D9	
3AB3 E12	
3AB5 F12	
3AB6 E10	
3AB7 F12	
3AB8 E10	
3AB9 E9	
3AC8 B5	
5A23 D1	
5A24 D1	
5A31 H12	
5A32 H12	
5A33 H12	
5A37 B2	
5A60 E13	
5A61 D10	
5A62 B13	
5A63 B10	
5A64 B5	
5A65 B5	
5A66 B5	
5A67 H5	
7A61-A B12	

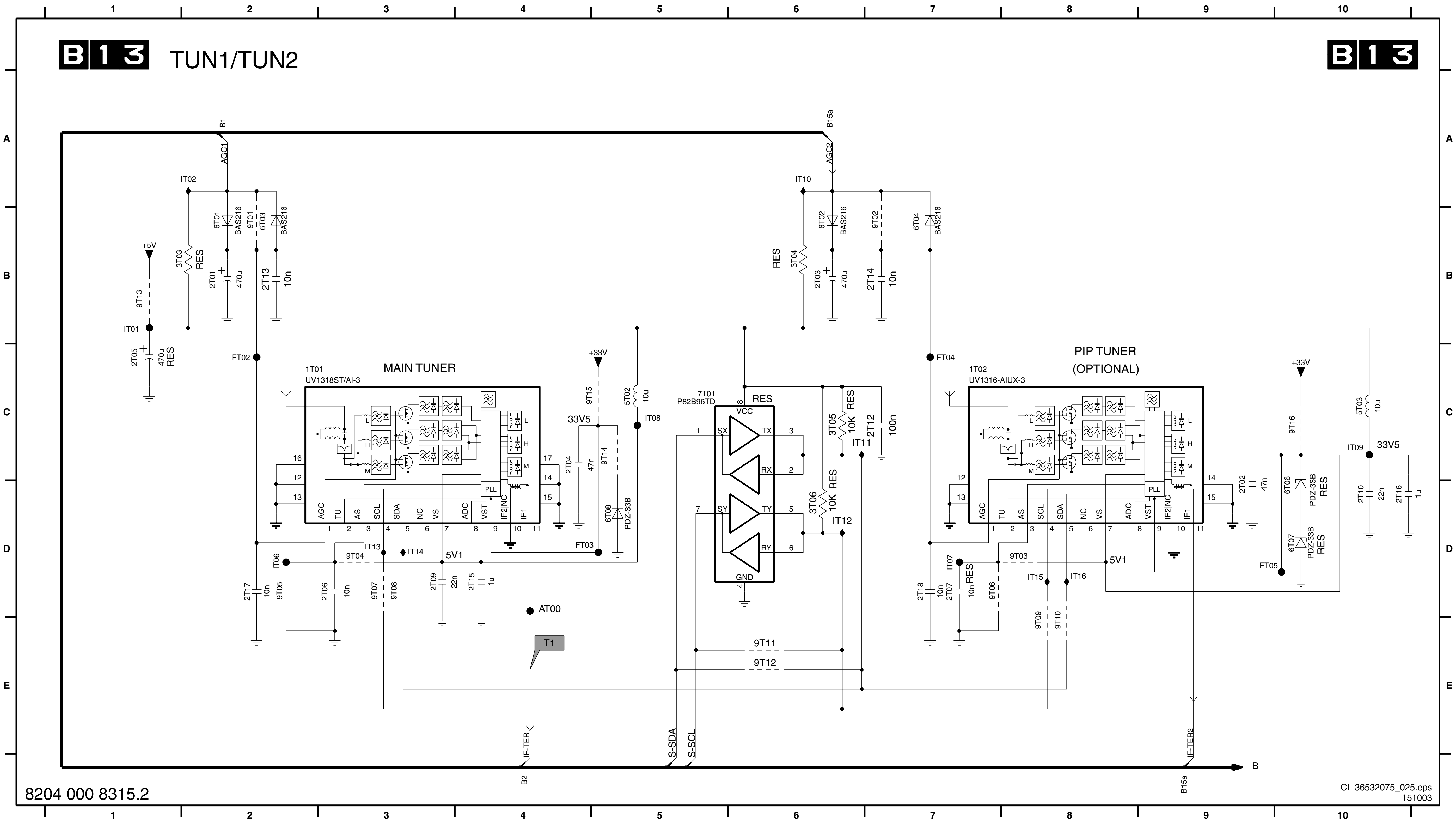
Small Signal Board: DC/DC-Convertor

1U01 A1
1U02 A13
2U01 A8
2U02 B8
2U03 B4
2U04 C5
2U05 D2
2U06 D3
2U07 D4
2U08 D7
2U09 D6
2U10 A3
2U11 E9
2U12 E6
2U13 E14
2U14 B5
2U15 A2
2U16 D2
2U17 D5
2U18 C2
2U19 H2
2U20 G4
2U21 C4
2U22 H6
2U23 D11
2U24 G8
2U25 G5
2U26 F5
2U27 D2
2U28 E2
2U29 F12
2U30 C1
2U31 D11
2U32 D1
2U33 F7
2U34 G10
2U35 G7
2U36 G12
2U37 H11
3U01 C14
3U02 B1
3U03 C1
3U04 C2
3U05 C3
3U06 C10
3U07 D8
3U08 D9
3U09 D4
3U10 D14
3U11 D4
3U12 G10
3U13 D6
3U14 D1
3U15 D14
3U16 D9
3U17 E7
3U18 E9
3U19 E7
3U20 E14
3U21 E3
3U22 E10
3U23 F14
3U24 G6
3U25 F3
3U26 G4
3U27 H10
3U28 E1
3U29 C2
3U30 C2
3U31 C2
3U32 H1
3U33 H2
3U34 G4
3U35 H5
3U36 H9
3U37 F9
3U38 F8
3U39 G8
3U40 G8
3U41 H6
3U42 G5
3U43 G5
3U44 D2
3U45 E2
3U46 C9
3U47 H11
3U48 H11
3U49 H12
3U50 H13
3U51 B5
3U52 F9
3U53 F9
3U54 H7
3U55 E8
3U56 H13
3U57 G12
3U58 F13
3U59 F13
5U01 B7
5U02 A2
5U03 C6
5U04 C6
5U05 C11
5U06 D11
5U07 E13
5U08 F13
6U01 A2
6U02 B8
6U03 B5
6U04 B5
6U05 C1
6U06 D8
6U07 D14
6U08 E3
6U09 E4
6U10 H1
6U11 H2
6U12 F7
6U13 E9
6U14 G7
6U15 H8
6U16 G14
7U01 B2
7U02 C4
7U03 C6
7U04 C5
7U05 D9
7U06-A D10
7U06-B E11
7U07 F7
7U08 E5
7U09 E1
7U10 F4
7U11 F3
7U12 H3
7U13 G9
7U14 G13
7U15 G13
7U16 G13
9U01 B11
9U02 A11
9U03 A11
9U04 B11
9U05 A14
9U06 B14
9U07 B14
9U08 B11
9U09 G14
9U10 G14
FU01 B13
FU02 B13
FU03 B9
FU04 C8
FU05 C7
FU06 G6
FU07 H1
FU08 C8
FU09 D11
IU01 B2
IU02 C1
IU03 D1
IU04 E3
IU05 D3
IU06 D4
IU07 D4
IU08 C4
IU09 B5
IU10 B4
IU11 B5
IU12 H12
IU13 D7
IU14 D6
IU15 B7
IU16 B10
IU17 D8
IU18 D10
IU19 C14
IU20 E9
IU21 E14
IU22 E10
IU23 A13
IU24 B13
IU25 G4
IU26 F3
IU27 G3
IU28 G2
IU29 H12
IU30 C3
IU31 D2
IU32 E2
IU33 G13
IU34 H5
IU35 G6
IU36 G8
IU37 F8
IU38 F9
IU39 G9
IU40 G10
IU41 H7
IU42 C6
IU43 E9
IU44 F10
IU45 F7
IU46 G13
IU47 F14
IU48 F12
cU01 A13
cU02 A13

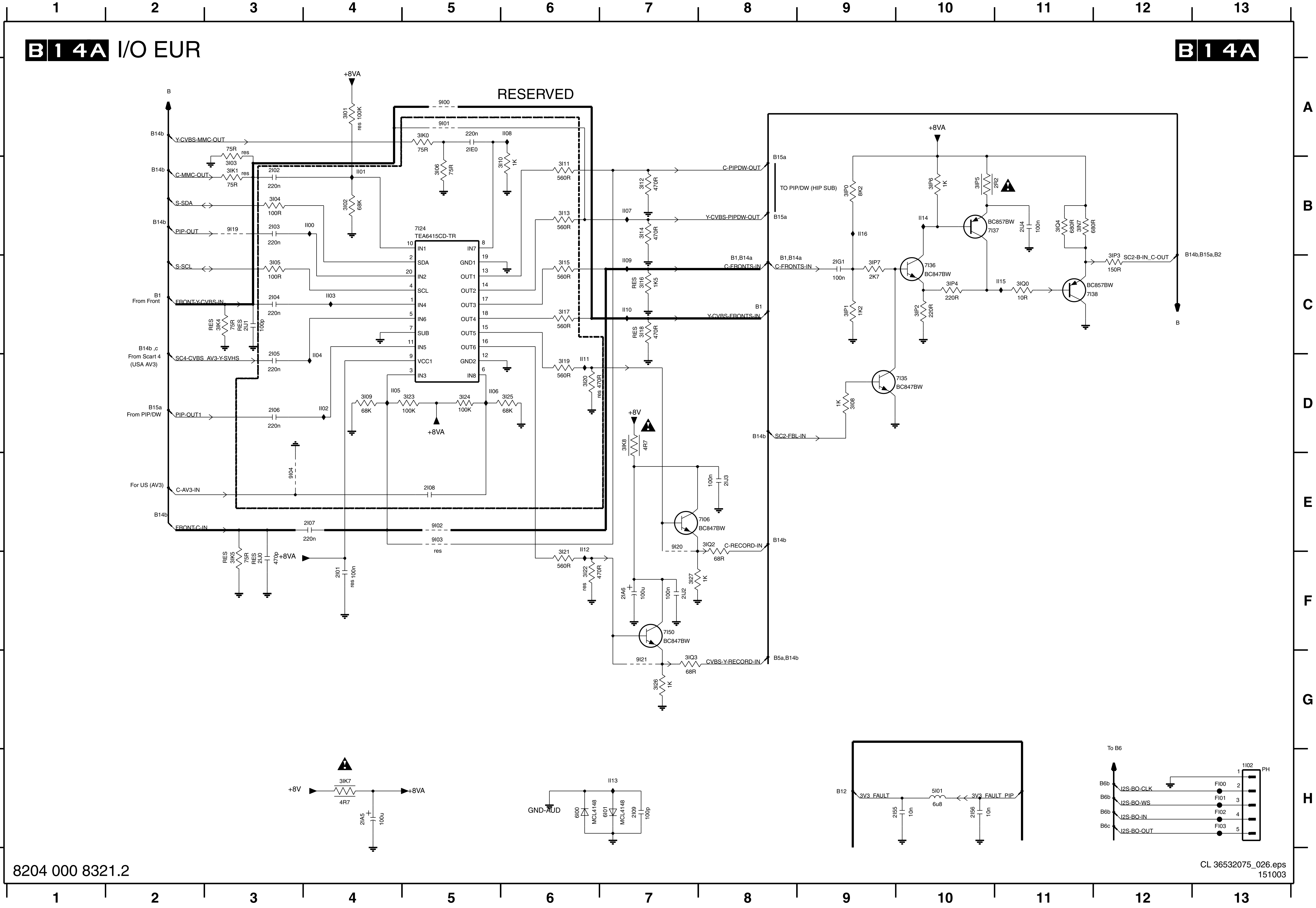

B12
DC/DC - CONVERTOR (PARTLY USED)
+11V
1U01 T800mA 446
5U02 10u
2U15 100u
6U01 BAS316
2U10 470u
GND_MAIN
20V8
3U02 1K
IU01
7U01 BC857B
6U05 BZX384-C12
2U18 120p
3U31 120R
3U29 10R
2U30 120p
3U30 120R
3U03 33K
IU02
IU30
3U04 120R
2U16 4n7
2U32 3n3
IU31
2U05 1n
IU03
3U14 1K
3U44 1M
2U27 6n8
BC817-25 7U09
3U28 47K
IU32
3U45 1M
2U28 6n8
GND_SUPPLY
IU10
6U03 BAS316
3U51 33R
IU11
2U03 1u
6U04 BAS316
2U14 470n
IU09
2U21 470n
2U04 470n
7U02 BC857B
3U05 1K
IU08
2U06 470u
2U07 82p
3U09 5K6
IU07
3U11 120R
IU05
IU06
2U17 470n
7U04 SI4410DY
IU42
5U03 30R
5U04 30R
SI4410DY 7U03
FU05
2U09 1n
3U13 10K
IU14
3U17 4R7
IU13
7U08 BC817-25
2U12 10n
3U19 4K7
3U21 47K
6U08 BAT54 COL
6U09 BAT54 COL
IU04
IU26
7U11 BC847B
3U25 220K
7U10 BC847B
IU27
B3a
3V3_FAULT
2U26 100n
3U43 22K
FU06
3U24 22K
IU25
3U26 22K
2U20 2u2
3U34 330K
3U42 10K
2U25 100n
IU34
2U22 2u2
3U35 10K
7U12 BC847B
3U32 18K
FU07
6U10 BZX384-C15
IU28
2U19 100n
6U11 BAS316
3U33 10K
GND-ILINK
IU15
2U01 2n2
6U02 STPS2L30A
FU03
+3V3-ILINK
2U02 47u
FU04
5U01
FU08
2U08 470u
1SMA59
6U06
3U07 22R
IU17
7U05 BC857B
IU45
PDZ-5.1B 6U12
2U33 2u2
7U07 BC857BW
IU37
3U38 2K2
IU38
3U37 22K
3U40 150K
2U24 1n
IU36
3U39 22K
IU39
2U35 1u
IU35
6U14 BAS316
3U41 1K
3U54 100R
IU41
6U15 BAS316
3U55 1K
+3V3-PROTECT
3U46 47K 1%
IU16
3V6
3U08 1K5 1%
3U06 470R
IU18
3U16 47R
7U06-A BC847BS
IU20
2U11 1n
3U18 1K 1%
6U13 PDZ-9.1B
IU43
3U53 18K
3U52 1K
3U22 270R
7U06-B BC847BS
7U13 BC847BW
IU44
3U12 22K
2U34 22n
IU40
3U36 2K2
3U27 22K
5U05 10u
+3V3_SIM
2U23 100u
5U06 10u
FU09 +3V3_DCDCFBX
2U31 100u
cU01 cU02 GND
+5V2
+11V
9U03
IU23
1U02 PH
9U05
9U02
+5V
9U08
FU01
9U06
NOT USED FOR THIS SET
9U01
+3V3_SIM
FU02
IU24
9U04
9U07
3U01 1K0
6V9
IU19
3U10 10R
6U07 PDZ-6.8B
3U15 3K9 1%
IU21
3U20 1K 1%
2U13 470n
3U23 120R
+3V3-DISP
5U07
5U08
2U29 100n
+5V2
+9V
IU47
IU48
3U58 3K9
3U59 47K
7U16 SI4410DY
IU46
2U36 470n
3U57 2K2
BC857BW 7U15
IU33
BZX384-C15 6U16
9U09 9U10
7U14 BC847BW
IU29
3U56 10K
3U47 1K0
2U37 470n
3U48 10K
IU12
3U49 1K0
3U50 100K
3V3_FAULT
8204 000 8322.2
CL 36532075_024.eps
061103

Small Signal Board: Tun1/Tun2

1T01 C2
1T02 C7
2T01 B2
2T02 D9
2T03 B6
2T04 C4
2T05 C1
2T06 D3
2T07 D7
2T09 D3
2T10 D10
2T12 C7
2T13 B2
2T14 B7
2T15 E3
2T16 D10
2T17 D2
2T18 D7
3T03 B2
3T04 B6
3T05 C6
3T06 D6
5T02 C5
5T03 C10
6T01 B2
6T02 B6
6T03 B2
6T04 B7
6T06 D10
6T07 D10
6T08 D5
7T01 C5
9T01 B2
9T02 B7
9T03 D8
9T04 D3
9T05 D2
9T06 D7
9T07 D3
9T08 D3
9T09 E8
9T10 E8
9T11 E6
9T12 E6
9T13 B1
9T14 C5
9T15 C5
9T16 C10
AT00 D4
FT02 C2
FT03 D4
FT04 C7
FT05 D9
IT01 B1
IT02 A2
IT06 D2
IT07 D7
IT08 C5
IT09 C10
IT10 A6
IT11 C6
IT12 D6
IT13 D3
IT14 D3
IT15 D8
IT16 D8


B13
TUN1/TUN2
B13
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
B1
AGC1
B15a
AGC2
IT02
IT10
6T01
BAS216
9T01
6T03
BAS216
6T02
BAS216
9T02
6T04
BAS216
+5V
3T03
RES
2T01
470u
2T13
10n
RES
3T04
2T03
470u
2T14
10n
9T13
IT01
2T05
470u
RES
FT02
FT04
1T01
UV1318ST/AI-3
MAIN TUNER
+33V
9T15
5T02
10u
IT08
33V5
2T04
47n
9T14
6T08
PDZ-33B
FT03
7T01
P82B96TD
RES
VCC
SX
TX
RX
SY
TY
RY
GND
3T05
10K
RES
2T12
100n
IT11
3T06
10K
RES
IT12
PIP TUNER
(OPTIONAL)
1T02
UV1316-AIUX-3
+33V
9T16
5T03
10u
IT09
33V5
2T02
47n
6T06
PDZ-33B
RES
6T07
PDZ-33B
RES
2T10
22n
2T16
1u
FT05
AGC
TU
AS
SCL
SDA
NC
VS
ADC
VST
IF2|NC
IF1
PLL
IT06
9T04
IT13
IT14
5V1
2T17
10n
9T05
2T06
10n
9T07
9T08
2T09
22n
2T15
1u
AT00
T1
IT07
9T03
RES
2T18
10n
2T07
10n
9T06
IT15
IT16
5V1
9T09
9T10
9T11
9T12
IF-TER
S-SDA
S-SCL
IF-TER2
B2
B15a
B
8204 000 8315.2
CL 36532075_025.eps
151003

Small Signal Board: I/O Eur


B14A I/O EUR
B14A
RESERVED
TEA6415CD-TR
7I24
BC847BW
BC857BW
7I06
7I35
7I36
7I37
7I38
7I50
MCL4148
+8VA
+8V
Y-CVBS-MMC-OUT
C-MMC-OUT
S-SDA
PIP-OUT
S-SCL
FRONT-Y-CVBS-IN
SC4-CVBS_AV3-Y-SVHS
PIP-OUT1
C-AV3-IN
FRONT-C-IN
C-PIPDW-OUT
Y-CVBS-PIPDW-OUT
C-FRONTS-IN
Y-CVBS-FRONTS-IN
TO PIP/DW (HIP SUB)
SC2-B-IN_C-OUT
SC2-FBL-IN
C-RECORD-IN
CVBS-Y-RECORD-IN
GND-AUD
3V3_FAULT
3V3_FAULT_PIP
I2S-BO-CLK
I2S-BO-WS
I2S-BO-IN
I2S-BO-OUT
To B6
From Front
From Scart 4 (USA AV3)
From PIP/DW
For US (AV3)
8204 000 8321.2
CL 36532075_026.eps
151003

1I02	H13
2I01	F4
2I02	B3
2I03	B3
2I04	C3
2I05	D3
2I06	D3
2I07	E4
2I08	E5
2I09	H7
2I55	H10
2I56	H10
2IA5	H4
2IA6	F7
2IE0	A5
2IG1	C9
2IJ0	F3
2IJ1	C3
2IJ2	F7
2IJ3	E8
2IJ4	B11
3I01	A4
3I02	B4
3I03	B3
3I04	B3
3I05	C3
3I06	B5
3I08	D9
3I09	D4
3I10	B6
3I11	B6
3I12	B7
3I13	B6
3I14	B7
3I15	C6
3I16	C7
3I17	C6
3I18	C7
3I19	D6
3I20	D6
3I21	F6
3I22	F6
3I23	D5
3I24	D5
3I25	D6
3I26	G7
3I27	F7
3IK0	A5
3IK1	B3
3IK4	C3
3IK5	F3
3IK7	H4
3IK8	D7
3IP0	B9
3IP1	C9
3IP2	C10
3IP3	C12
3IP4	C10
3IP5	B10
3IP6	B10
3IP7	C9
3IQ0	C11
3IQ1	B11
3IQ2	E8
3IQ3	G7
3IQ4	B11
5I01	H10
6I00	H6
6I01	H7
7I06	E8
7I24	B5
7I35	D10
7I36	C10
7I37	B10
7I38	C11
7I50	F7
9I00	A5
9I01	A5
9I02	E5
9I03	E5
9I04	E3
9I19	B3
9I20	E7
9I21	G7
FI00	H13
FI01	H13
FI02	H13
FI03	H13
II00	B4
II01	B4
II02	D4
II03	C4
II04	D4
II05	D4
II06	D5
II07	B7
II08	A6
II09	C7
II10	C7
II11	D6
II12	E6
II13	H7
II14	B10
II15	C11
II16	B9

Small Signal Board: I/O Eur

V00 L18
V07 L20
1I01-1 B4
1I01-2 B9
1I01-3 E21
1I03 L18
1I04-1 B15
1I04-2 B20
1I04-3 C13
1I05 F5
1I06-1 J5
1I06-2 K5
1I06-3 J5
1I06-4 I5
1I06-5 H5
1I06-6 I5
1I08 L6
1I09-1 B15
1I09-2 D13
1I11 G11
1I13 I11
1I14 I10
1I19 M18
1I25 B14
1I26 C14
1I27 C16
1I28 E16
1I29 B20
1I30 C20
1I31 C20
1I32 E20
1I34 B4
1I35 B4
1I36 C5
1I37 B5
1I38 B5
1I39 B9
1I40 B9
1I41 C8
1I42 D8
1I43 D9
1I44 D9
1I45 C9
1I46 B9
1I47 B9
1I48 G5
1I49 G5
1I50 H5
1I51 H6
1I52 I5
1I53 I6
1I54 I5
1I55 J4
1I56 K4
1I57 K4
1I58 F4
1I71 C4
1I72 C4
1I73 D4
1I74 E4
1I75 E9
1I76 E9
1I80 H6
1I82 L5
1I83 M5
1I96 D16
2I10 B13
2I11 C13
2I12 C17
2I13 B18
2I14 C18
2I15 C21
2I16 B3
2I17 B3
2I18 B6
2I19 B6
2I20 C6
2I21 B7
2I22 B7
2I23 B10
2I24 B10
2I25 C10
2I26 G4
2I27 G4
2I28 H4
2I29 I4
2I30 I4
2I31 H3
2I32 I3
2I33 J3
2I34 K3
2I35 K3
2I36 F3
2I38 G17
2I39 K14
2I41 G19
2I42 I19
2I43 I20
2I44 I17
2I45 H19
2I46 K21
2I47 M16
2IA4 L14
2IC0 F3
2IC1 G3
2IC2 H3
2IC6 M5
2IC9 E8
2IH3 L16
2IH5 L3
2IH6 M4
2IH7 L5
3000 K14
3I28 L15
3I34 B13
3I35 B14
3I36 C13
3I37 C14
3I38 C16
3I39 C16
3I40 E16
3I41 E17
3I42 B18
3I43 B19
3I44 C18
3I45 C19
3I46 C21
3I47 C21
3I48 E20
3I49 E21
3I50 A3
3I51 A3
3I52 B3
3I53 B3
3I54 C3
3I55 C3
3I56 C3
3I57 C4
3I58 D3
3I59 D4
3I60 D3
3I61 A5
3I62 B5
3I63 C5
3I64 C6
3I65 D6
3I66 D5
3I67 E5
3I68 D6
3I69 A7
3I70 A8
3I71 B7
3I72 B8
3I73 C7
3I74 C8
3I75 C7
3I76 D7
3I77 D8
3I78 D8
3I79 A10
3I80 B10
3I81 C10
3I82 C10
3I83 C10
3I84 D10
3I85 D10
3I86 D10
3I87 D10
3I88 E10
3I89 F3
3I90 F4
3I91 G3
3I92 G4
3I94 H3
3I95 H4
3I96 H3
3I97 H4
3I98 L16
3I99 I3
3IA0 I4
3IA1 M16
3IA2 F3
3IA3 F3
3IA4 F14
3IA5 G14
3IA6 H14
3IA7 H14
3IA8 I14
3IA9 I14
3IB0 J14
3IB2 B6
3IB4 K21
3IB5 K21
3IB7 H17
3IC0 I19
3IC1 L20
3IC2 L16
3IC3 L16
3IC4 B6
3IC6 B11
3IC7 I17
3IC8 I19
3IC9 I19
3ID0 K20
3ID3 I19
3IK2 B10
3IK3 B10
3IN5 B6
3IN6 B6
3IP8 L4
3IQ5 D17
3IQ6 D16
3IS0 L4
3IS1 M4
3IS2 B11
3IS3 B13
3IS4 C13
3IS5 B18
3IS6 C18
3IS8 I19
3IS9 H19
3IT0 G3
3IT1 G3
3IT2 H3
3IT3 I3
3IT4 I3
3IT5 L4
3IT6 L4
3IT8 M4
6I06 D16
6I10 B14
6I11 B14
6I12 C14
6I13 C14
6I14 C16
6I15 E16
6I16 B19
6I17 B19
6I18 C19
6I19 C19
6I20 C21
6I21 E21
6I22 B4
6I23 B4
6I24 B4
6I25 B4
6I26 C4
6I27 C4
6I28 D4
6I29 E4
6I30 B5
6I31 B5
6I32 B5
6I33 B5
6I34 C6
6I35 D5
6I36 E5
6I37 B8
6I38 B8
6I39 B8
6I40 B8
6I41 C8
6I42 C8
6I43 E8
6I44 D8
6I45 B10
6I46 B10
6I47 B10
6I48 B10
6I49 C11
6I50 D10
6I51 D10
6I52 E10
6I53 F4
6I54 G5
6I55 G4
6I56 G5
6I57 H4
6I58 H5
6I59 I4
6I60 I5
6I61 I4
6I62 J5
6I63 J4
6I64 J4
6I65 J4
6I66 K4
6I67 K4
6I68 K4
6I69 F4
6I70 F4
6I73 K17
6I74 K17
6I75 J18
6I76 J20
6I77 J20
6I78 J18
6I79 J18
6IA0 C5
6IA5 J21
6IA6 K21
6IA7 K15
6IA8 K21
7I01-A F13
7I01-B G13
7I02-A H13
7I02-B H13
7I03-A I13
7I03-B I13
7I04-A J13
7I05 L13
7I07 K20
7I08-A I18
7I08-B H18
7I09 K21
7I44-A L15
7I44-B L15
9I07 J3
9I08 K9
9I09 J9
9I10 K10
9I11 J9
9I12 L10
9I13 J21
9I14 K13
9I15 K15
9I16 K19
9I17 D2
9I92 J12
9I93 J10
9I94 I12
9I97 K10
9IB1 J8
9IB2 J8
9IB3 I3
9IS0 E17
9IS2 H18
9IS3 I18
FI04 D16
FI10 L11
FI11 L11
FI12 K10
FI13 K10
FI14 K10
FI15 I10
FI16 I10
FI17 I10
FI18 I10
FI19 I10
FI20 B14
FI21 C14
FI22 B15
FI23 D15
FI24 C16
FI25 E16
FI26 B19
FI27 C19
FI28 B20
FI29 D20
FI30 C20
FI31 E21
FI32 A4
FI33 B4
FI34 B4
FI35 C4
FI36 C4
FI37 D4
FI38 D4
FI39 D4
FI40 E4
FI41 A5
FI42 B5
FI43 C5
FI44 D5
FI45 D5
FI46 A8
FI47 B8
FI48 B9
FI49 C8
FI50 G11
FI51 D9
FI52 D8
FI53 D8
FI54 D9
FI55 C9
FI56 D10
FI57 C9
FI58 B10
FI59 A10
FI60 F5
FI61 G5
FI62 H5
FI63 I5
FI64 I5
FI65 J4
FI66 J4
FI67 M5
FI68 F4
FI69 H11
FI71 L4
FI91 H2
FI92 H2
FI93 I2
FI94 K11
FI96 H11
FI97 L18
FI98 L18
FI99 L19
FIA0 L19
FIA1 L19
FIA2 L19
FIA3 L19
FIA4 L19
FIA6 L5
FIA8 K4
FIA9 H11
FIC1 J10
II20 B13
II21 B13
II22 C17
II23 B18
II24 B18
II25 A3
II26 B3
II27 C3
II28 K19
II29 C6
II32 A8
II33 B7
II34 D10
II35 C10
II36 B10
II37 A10
II38 F3
II39 J12
II40 H19
II41 H3
II42 I3
II43 E3
II44 L13
II45 K15
II46 K21
II47 K20
II48 K20
II49 J21
IIA0 D3
IIA1 A6
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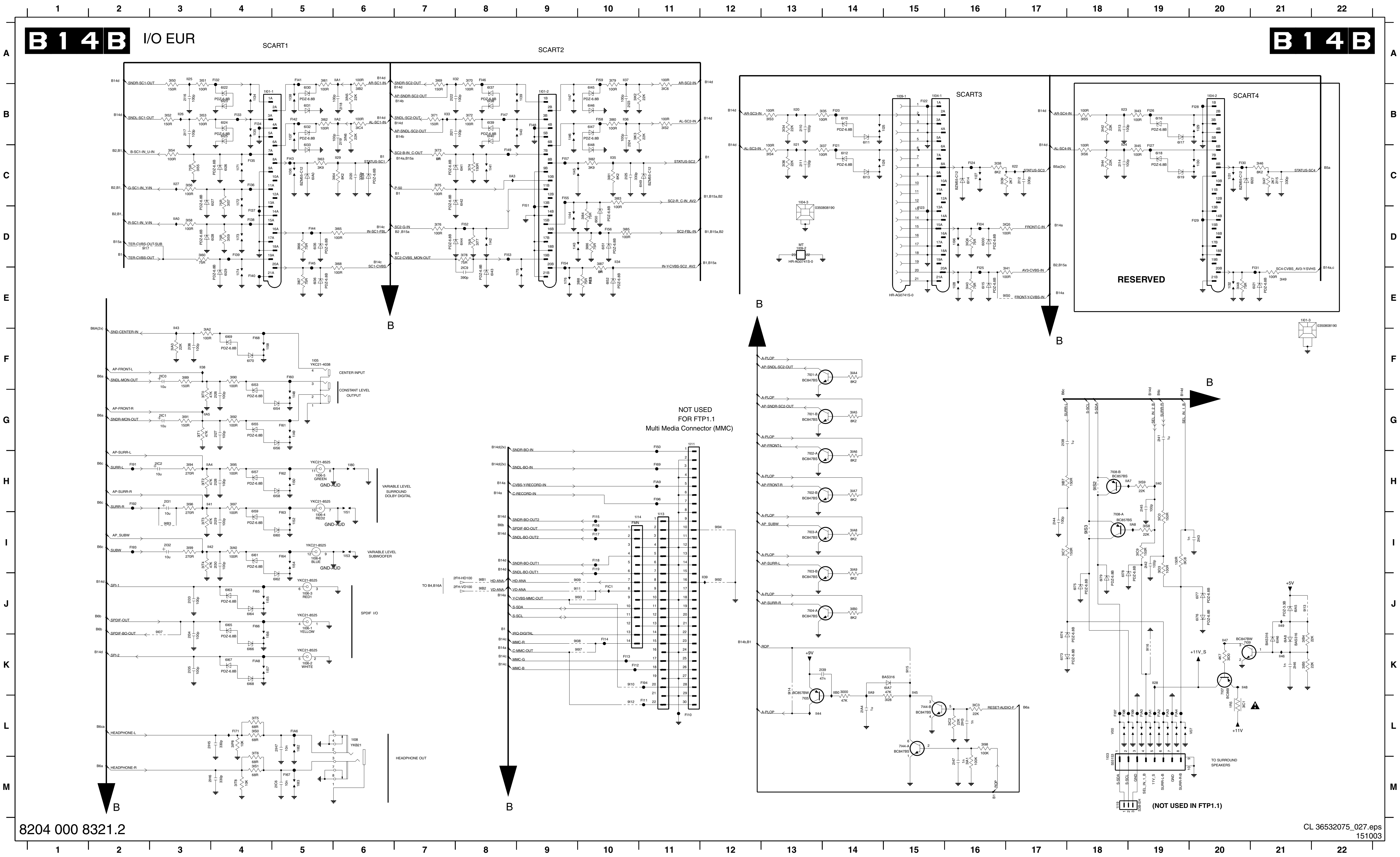
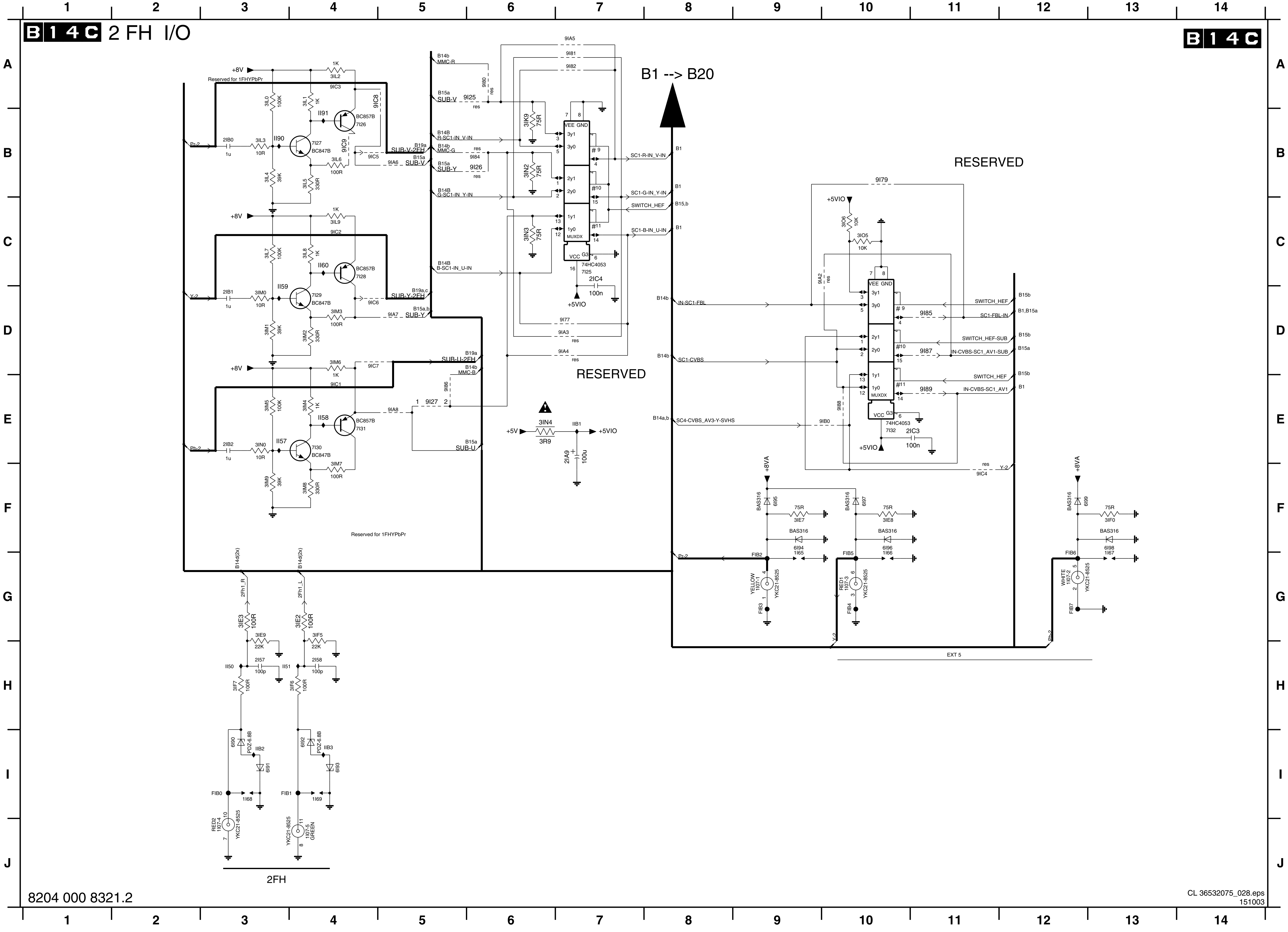
IIA3 C8
IIA4 H3
IIA5 G3
IIA7 H19
IIA8 I19
IIA9 K14
IIB0 K14

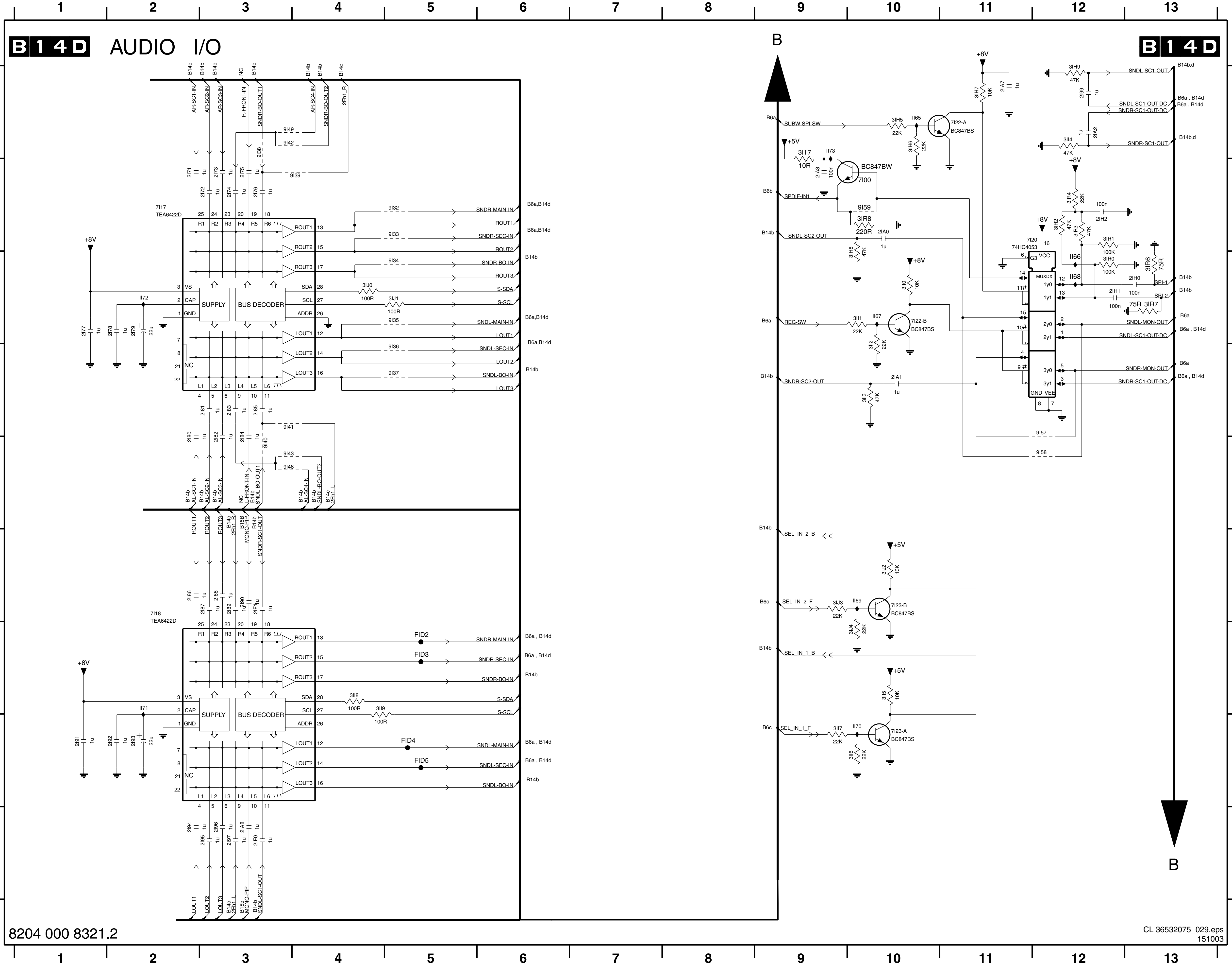

B14B
I/O EUR
SCART1
SCART2
SCART3
SCART4
RESERVED
NOT USED
FOR FTP1.1
Multi Media Connector (MMC)
CENTER INPUT
CONSTANT LEVEL OUTPUT
VARIABLE LEVEL SURROUND DOLBY DIGITAL
VARIABLE LEVEL SUBWOOFER
SPDIF I/O
HEADPHONE OUT
TO SURROUND SPEAKERS
(NOT USED IN FTP1.1)
GREEN
RED2
BLUE
RED1
YELLOW
WHITE
GND-AUD
SNDR-SC1-OUT
SNDL-SC1-OUT
B-SC1-IN_U-IN
G-SC1-IN_Y-IN
R-SC1-IN_V-IN
TER-CVBS-OUT-SUB
SNDR-SC2-OUT
SNDL-SC2-OUT
SC2-B-IN_C-OUT
STATUS-SC1
STATUS-SC2
SC2-R_C-IN_AV2
SC2-FBL-IN
IN-Y-CVBS-SC2_AV2
AR-SC3-IN
AL-SC3-IN
STATUS-SC3
FRONT-C-IN
AV3-CVBS-IN
FRONT-Y-CVBS-IN
AR-SC4-IN
AL-SC4-IN
STATUS-SC4
SC4-CVBS_AV3-Y-SVHS
SND-CENTER-IN
AP-FRONT-L
SNDL-MON-OUT
AP-FRONT-R
SNDR-MON-OUT
AP-SURR-L
SURR-L
AP-SURR-R
SURR-R
AP_SUBW
SUBW
SPI-1
SPDIF-OUT
SPDIF-BO-OUT
SPI-2
HEADPHONE-L
HEADPHONE-R
TO B4,B16A
A-PLOP
RESET-AUDIO-F
+9V
+5V
+11V_S
+11V
BC847BS
BC857BS
BC847BW
8204 000 8321.2
CL 36532075_027.eps
151003

Small Signal Board: 2FH I/O


B14C
2 FH I/O
B1 --> B20
RESERVED
RESERVED
Reserved for 1FHYPbPr
Reserved for 1FHYPbPr
+8V
+5V
+5VIO
+8VA
3IN4
3R9
IIB1
2IA9
100u
2IC4
100n
2IC3
100n
74HC4053
7I25
7I32
MUXDX
VEE GND
VCC
3IK9 75R
3IN2 75R
3IN3 75R
BC857B
BC847B
7I26
7I27
7I28
7I29
7I30
7I31
II90
II91
II59
II60
II57
II58
Pr-2
Y-2
Pb-2
SUB-V
SUB-Y
SUB-U
SUB-V-2FH
SUB-Y-2FH
SUB-U-2FH
MMC-R
MMC-G
MMC-B
R-SC1-IN_V-IN
G-SC1-IN_Y-IN
B-SC1-IN_U-IN
SC1-R-IN_V-IN
SC1-G-IN_Y-IN
SC1-B-IN_U-IN
SWITCH_HEF
IN-SC1-FBL
SC1-FBL-IN
SC1-CVBS
SWITCH_HEF-SUB
IN-CVBS-SC1_AV1-SUB
IN-CVBS-SC1_AV1
SC4-CVBS_AV3-Y-SVHS
9I79
9I85
9I87
9I89
9IB0
9IC4
EXT 5
BAS316
75R
3IE7
3IE8
3IF0
FIB2
FIB3
FIB4
FIB5
FIB6
FIB7
YELLOW
RED1
WHITE
YKC21-8525
2Fh1_R
2Fh1_L
3IE3 100R
3IE2 100R
3IE9 22K
3IF5 22K
2I57 100p
2I58 100p
II50
II51
3IF7 100R
3IF6 100R
PDZ-6.8B
IIB2
IIB3
FIB0
FIB1
1I68
1I69
RED2
GREEN
2FH
8204 000 8321.2
CL 36532075_028.eps
151003

1I07-1	G9
1I07-2	G12
1I07-3	G10
1I07-4	J3
1I07-5	J4
1I65	G9
1I66	G10
1I67	G13
1I68	I3
1I69	I4
2I57	H3
2I58	H4
2IA9	E7
2IB0	B3
2IB1	D3
2IB2	E3
2IC3	E11
2IC4	C7
3IE2	G4
3IE3	G3
3IE7	F9
3IE8	F10
3IE9	G3
3IF0	F13
3IF5	G4
3IF6	H4
3IF7	H3
3IK9	B6
3IL0	A3
3IL1	A4
3IL2	A4
3IL3	B3
3IL4	B3
3IL5	B4
3IL6	B4
3IL7	C3
3IL8	C4
3IL9	C4
3IM0	D3
3IM1	D3
3IM2	D4
3IM3	D4
3IM4	E4
3IM5	E3
3IM6	D4
3IM7	F4
3IM8	F4
3IM9	F3
3IN0	E3
3IN2	B6
3IN3	C6
3IN4	E6
3IO5	C10
3IO6	C10
6I90	I3
6I91	I3
6I92	I4
6I93	I4
6I94	F9
6I95	F9
6I96	F10
6I97	F10
6I98	F13
6I99	F12
7I25	C7
7I26	B4
7I27	B4
7I28	C4
7I29	D4
7I30	E4
7I31	E4
7I32	E10
9I25	A6
9I26	B6
9I27	E5
9I77	D7
9I79	B10
9I80	A6
9I81	A7
9I82	A7
9I84	B6
9I85	D11
9I86	E5
9I87	D11
9I88	E10
9I89	E11
9IA2	C10
9IA3	D7
9IA4	D7
9IA5	A7
9IA6	B5
9IA7	D5
9IA8	E5
9IB0	E10
9IC1	E4
9IC2	C4
9IC3	A4
9IC4	F11
9IC5	B4
9IC6	D4
9IC7	D4
9IC8	A5
9IC9	B4
FIB0	I3
FIB1	I3
FIB2	G9
FIB3	G9
FIB4	G10
FIB5	F10
FIB6	F12
FIB7	G12
II50	H3
II51	H3
II57	E3
II58	E4
II59	D3
II60	C4
II90	B3
II91	B4
IIB1	E7
IIB2	I3
IIB3	I4

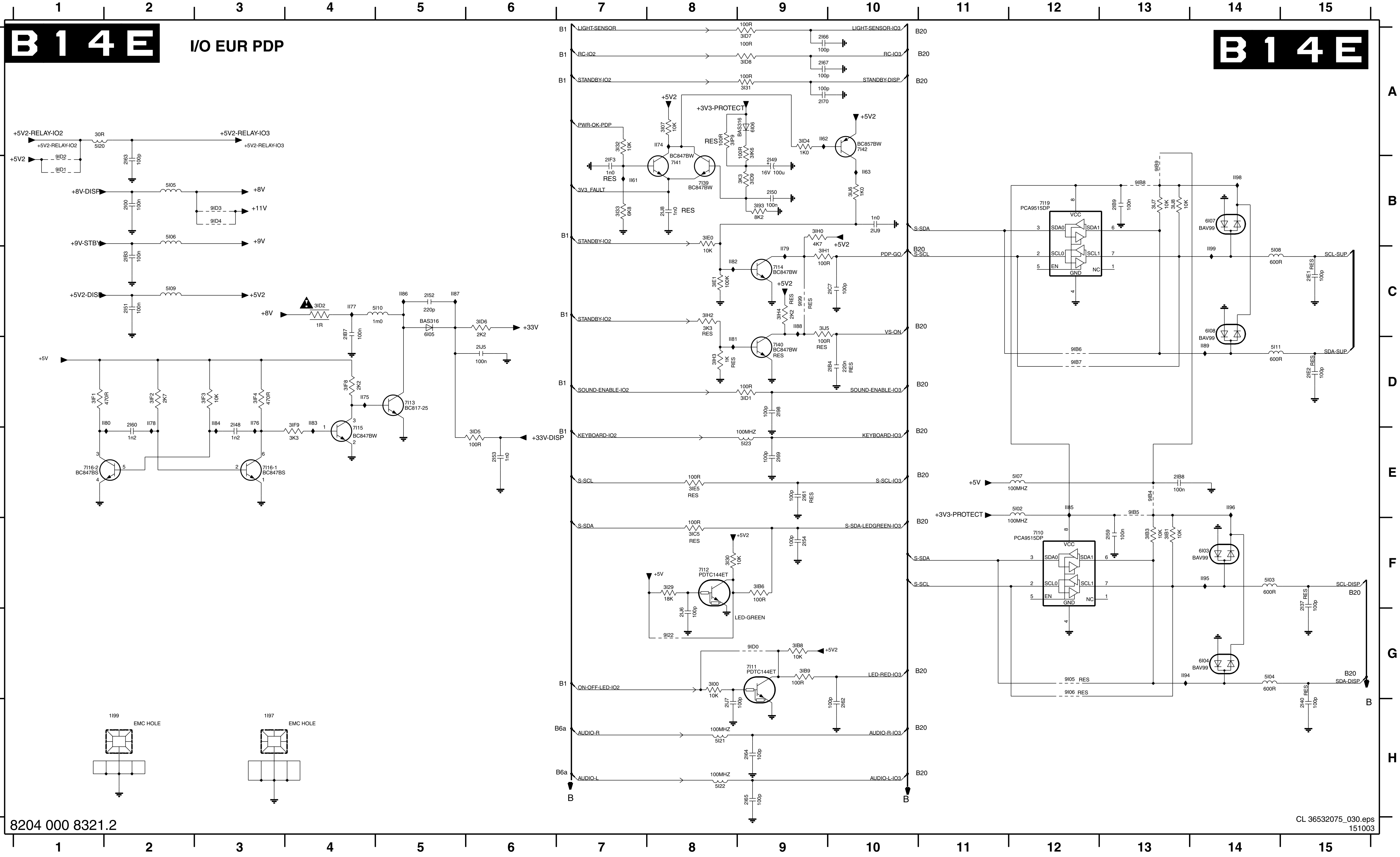
Small Signal Board: Audio I/O


B14D
AUDIO I/O
B
7I17
TEA6422D
7I18
TEA6422D
SUPPLY
BUS DECODER
+8V
+5V
AR-SC1-IN
AR-SC2-IN
AR-SC3-IN
R-FRONT-IN
SNDR-BO-OUT1
AR-SC4-IN
SNDR-BO-OUT2
2Fh1_R
AL-SC1-IN
AL-SC2-IN
AL-SC3-IN
L-FRONT-IN
SNDL-BO-OUT1
AL-SC4-IN
SNDL-BO-OUT2
2Fh1_L
ROUT1
ROUT2
ROUT3
LOUT1
LOUT2
LOUT3
MONO-PIP
SNDR-SC1-OUT
SNDL-SC1-OUT
SNDR-MAIN-IN
SNDR-SEC-IN
SNDR-BO-IN
S-SDA
S-SCL
SNDL-MAIN-IN
SNDL-SEC-IN
SNDL-BO-IN
FID2
FID3
FID4
FID5
SUBW-SPI-SW
SPDIF-IN1
SNDL-SC2-OUT
REG-SW
SNDR-SC2-OUT
SNDL-SC1-OUT-DC
SNDR-SC1-OUT-DC
SPI-1
SPI-2
SNDL-MON-OUT
SNDR-MON-OUT
SEL_IN_2_B
SEL_IN_2_F
SEL_IN_1_B
SEL_IN_1_F
7I20
74HC4053
7I22-A
BC847BS
7I22-B
7I23-A
7I23-B
7I00
BC847BW
8204 000 8321.2
CL 36532075_029.eps
151003

2I71	B2
2I72	B3
2I73	B3
2I74	B3
2I75	B3
2I76	B3
2I77	C1
2I78	C2
2I79	C2
2I80	E2
2I81	D3
2I82	E3
2I83	D3
2I84	E3
2I85	D3
2I86	F2
2I87	F3
2I88	F3
2I89	F3
2I90	F3
2I91	H1
2I92	H2
2I93	H2
2I94	I2
2I95	I3
2I96	I3
2I97	I3
2I99	A12
2IA0	B10
2IA1	D10
2IA2	A12
2IA3	B9
2IA7	A11
2IA8	I3
2IF0	I3
2IF1	F3
2IH0	C13
2IH1	C12
2IH2	B12
3IH5	A10
3IH6	A10
3IH7	A11
3IH8	C10
3IH9	A12
3II0	C10
3II1	C10
3II2	D10
3II3	D10
3II4	A12
3II5	G10
3II6	H10
3II7	H9
3II8	G4
3II9	G4
3IJ0	C4
3IJ1	C5
3IJ2	F10
3IJ3	F9
3IJ4	G10
3IR0	C12
3IR1	B12
3IR2	B12
3IR3	B12
3IR4	B12
3IR6	C13
3IR7	C13
3IR8	B10
3IT7	A9
7I00	B10
7I17	B2
7I18	F2
7I20	B12
7I22-A	A11
7I22-B	C10
7I23-A	H10
7I23-B	F10
9I32	B5
9I33	B5
9I34	C5
9I35	C5
9I36	D5
9I37	D5
9I38	A3
9I39	B4
9I40	E3
9I41	D3
9I42	A3
9I43	E3
9I48	E3
9I49	A3
9I57	D12
9I58	E12
9I59	B10
FID2	G5
FID3	G5
FID4	H5
FID5	H5
II65	A10
II66	C12
II67	C10
II68	C12
II69	F10
II70	H10
II71	G2
II72	C2
II73	A9

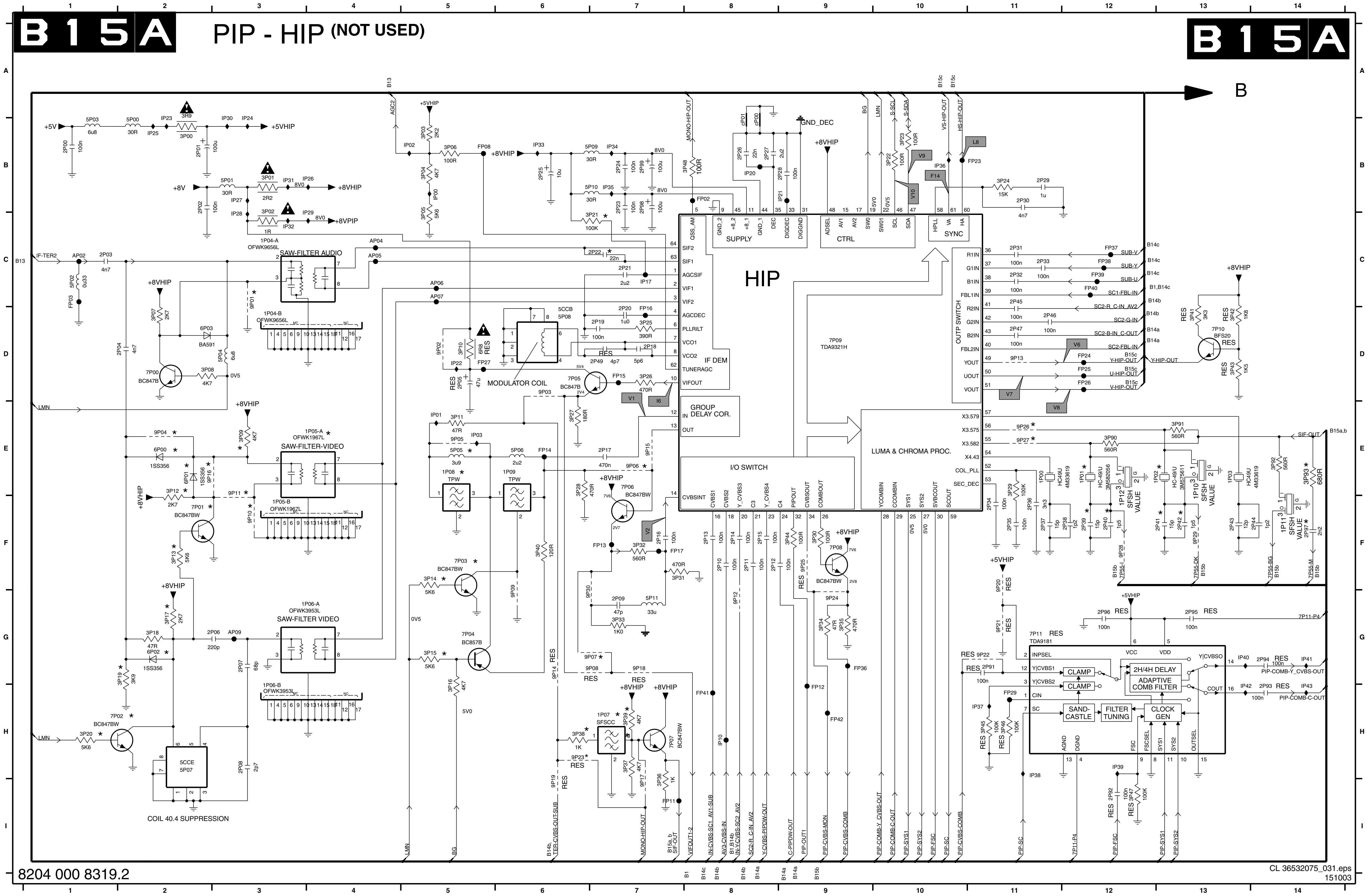
Small Signal Board: I/O EUR PDP

1I97	H3
1I99	H2
2I00	B2
2I37	F15
2I40	H15
2I48	D3
2I49	B9
2I50	B9
2I51	C2
2I52	C5
2I53	E6
2I54	F9
2I59	F13
2I60	D2
2I61	E9
2I62	H10
2I63	B2
2I64	H9
2I65	H9
2I66	A9
2I67	A9
2I69	E9
2I70	A9
2I98	D9
2IB3	C2
2IB4	D10
2IB7	C4
2IB8	E13
2IB9	B13
2IC7	C10
2IE1	C15
2IE2	D15
2IF3	B7
2IJ5	D6
2IJ6	G8
2IJ7	H8
2IJ8	B8
2IJ9	B10
3I00	G8
3I07	A8
3I29	F8
3I30	F8
3I31	A9
3I32	A7
3I33	B7
3I93	B9
3IB1	F13
3IB3	F13
3IB6	F9
3IB8	G9
3IB9	G9
3IC5	F8
3ID1	D9
3ID2	C4
3ID4	A9
3ID5	E6
3ID6	C6
3ID7	A9
3ID8	A9
3ID9	B9
3IE0	B8
3IE1	C8
3IE5	E8
3IF1	D1
3IF2	D2
3IF3	D3
3IF4	D3
3IF8	D4
3IF9	D4
3IH0	B9
3IH1	C9
3IH2	C8
3IH3	D8
3IH4	C9
3IJ5	C9
3IJ6	B10
3IJ7	B13
3IJ8	B13
3IK6	A9
3IP9	A8
5I02	E12
5I03	F14
5I04	G14
5I05	B2
5I06	B2
5I07	E12
5I08	C14
5I09	C2
5I10	C5
5I11	D14
5I20	A1
5I21	H8
5I22	H8
5I23	E9
6I03	F14
6I04	G14
6I05	C5
6I06	A9
6I07	B14
6I08	C14
7I10	F12
7I11	G9
7I12	F8
7I13	D5
7I14	C9
7I15	E4
7I16-1	E3
7I16-2	E1
7I19	B12
7I39	B8
7I40	D9
7I41	B8
7I42	A10
9I05	G12
9I06	G12
9I22	G8
9I99	C9
9IB4	E13
9IB5	E13
9IB6	D12
9IB7	D12
9IB8	B13
9IB9	B13
9ID0	G9
9ID1	B1
9ID2	B1
9ID3	B3
9ID4	B3
II61	B7
II62	A9
II63	B10
II74	A8
II75	D4
II76	D3
II77	C4
II78	D2
II79	C9
II80	D2
II81	D8
II82	C8
II83	D4
II84	D3
II85	E12
II86	C5
II87	C5
II88	C9
II89	G13
II89	D14
II95	F14
II96	E14
II97	B12
II98	B14
II99	C14


B14E
I/O EUR PDP
+5V2-RELAY-IO2
+5V2-RELAY-IO3
+5V2
9ID2
9ID1
+8V-DISP
+8V
+11V
9ID3
9ID4
+9V-STBY
+9V
+5V2-DISP
+8V
3ID2
1R
5I10
1m0
BAS316
6I05
2I52
220p
3ID6
2K2
+33V
2IJ5
100n
+5V
3IF1
470R
3IF2
2K7
3IF3
10K
3IF4
470R
2I60
1n2
2I48
1n2
3IF9
3K3
7I15
BC847BW
7I13
BC817-25
7I16-2
BC847BS
7I16-1
BC847BS
3ID5
100R
+33V-DISP
2I53
1n0
LIGHT-SENSOR
LIGHT-SENSOR-IO3
RC-IO2
RC-IO3
STANDBY-IO2
STANDBY-DISP
PWR-OK-PDP
+5V2
+3V3-PROTECT
BAS316
6I06
7I41
BC847BW
7I39
BC847BW
RES
3V3_FAULT
3ID4
1K0
7I42
BC857BW
2I49
16V 100u
3I93
8K2
2IJ9
1n0
3IE0
10K
3IH0
4K7
3IH1
100R
PDP-GO
7I14
BC847BW
3IH2
3K3
7I40
BC847BW
3IJ5
100R
VS-ON
2IB4
220n
SOUND-ENABLE-IO2
SOUND-ENABLE-IO3
KEYBOARD-IO2
KEYBOARD-IO3
100MHZ
5I23
S-SCL
S-SCL-IO3
3IE5
S-SDA
S-SDA-LEDGREEN-IO3
3IC5
7I12
PDTC144ET
3I29
18K
3IB6
100R
LED-GREEN
9I22
9ID0
3IB8
10K
7I11
PDTC144ET
3IB9
100R
LED-RED-IO3
ON-OFF-LED-IO2
3I00
10K
AUDIO-R
AUDIO-R-IO3
5I21
AUDIO-L
AUDIO-L-IO3
5I22
B1
B20
B6a
B
7I19
PCA9515DP
VCC
SDA0
SDA1
SCL0
SCL1
EN
NC
GND
6I07
BAV99
6I08
BAV99
5I08
600R
5I11
600R
SCL-SUP
SDA-SUP
9IB6
9IB7
9IB8
9IB9
5I07
100MHZ
2IB8
100n
5I02
100MHZ
9IB4
9IB5
7I10
PCA9515DP
6I03
BAV99
6I04
BAV99
5I03
600R
5I04
600R
SCL-DISP
SDA-DISP
9I05 RES
9I06 RES
1I99
1I97
EMC HOLE
8204 000 8321.2
CL 36532075_030.eps
151003

Small Signal Board: PIP-HIP

B15A PIP - HIP (NOT USED)


B15A
B
HIP
SUPPLY
CTRL
SYNC
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
7P09 TDA9321H
SAW-FILTER AUDIO
SAW-FILTER-VIDEO
SAW-FILTER VIDEO
1P04-A OFWK9656L
1P05-A OFWK1967L
1P06-A OFWK3953L
MODULATOR COIL
COIL 40.4 SUPPRESSION
7P11 TDA9181
CLAMP
CLAMP
2H/4H DELAY
ADAPTIVE COMB FILTER
SAND-CASTLE
FILTER TUNING
CLOCK GEN
+5V
+5VHIP
+8V
+8VHIP
+8VPIP
IF-TER2
LMN
GND_DEC
SIF-OUT
PIP-COMB-Y_CVBS-OUT
PIP-COMB-C-OUT
Y-HIP-OUT
U-HIP-OUT
V-HIP-OUT
MONO-HIP-OUT
VS-HIP-OUT
HS-HIP-OUT
RES
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

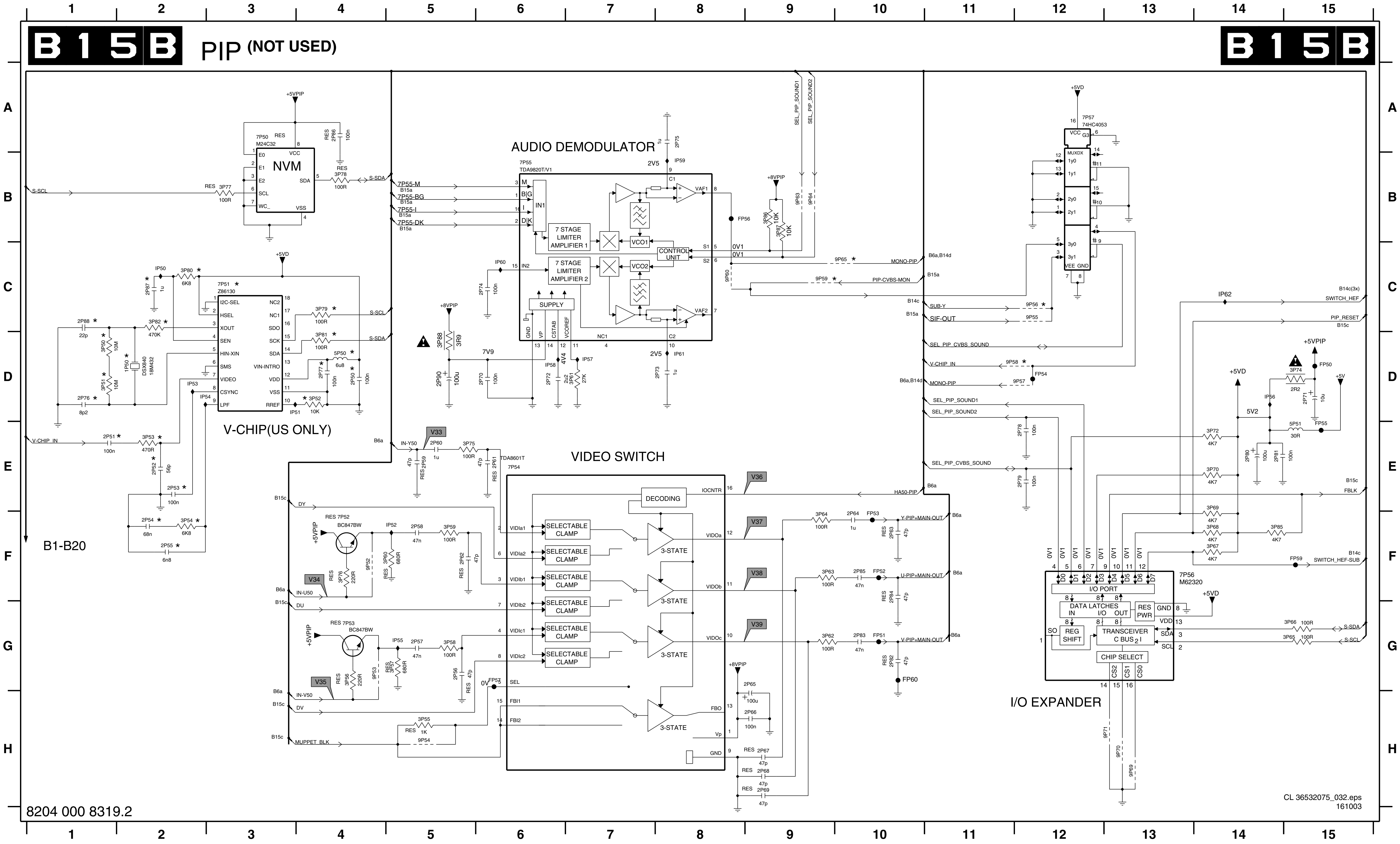
8204 000 8319.2

CL 36532075_031.eps
151003

1000-A	E1
1P00	E11
1P01	E12
1P02	E13
1P03	E13
1P04-A	C3
1P04-B	D3
1P05-A	E4
1P05-B	F3
1P06-A	G4
1P06-B	H3
1P07	G7
1P08	E5
1P09	E6
1P10	E13
1P11	F14
1P12	E12
2P00	B1
2P01	B2
2P02	B2
2P03	C1
2P04	D2
2P05	D5
2P06	G3
2P07	G3
2P08	H3
2P10	F8
2P11	F8
2P12	F8
2P13	F8
2P14	F8
2P15	F8
2P16	F7
2P17	E7
2P18	D7
2P19	D7
2P20	D7
2P21	C7
2P22	C7
2P23	B7
2P24	B7
2P25	B6
2P26	B8
2P27	B8
2P28	B9
2P29	B11
2P30	B11
2P31	C11
2P32	C11
2P33	C11
2P34	F11
2P35	F11
2P36	F11
2P37	F11
2P38	F12
2P39	F12
2P40	F12
2P41	F13
2P42	F13
2P43	F13
2P44	F14
2P45	C11
2P46	D11
2P47	D11
2P48	F7
2P49	D7
2P91	G11
2P92	I12
2P93	H14
2P94	G14
2P95	G13
2P96	G12
2P97	F14
2P98	B7
2P99	B7
3P00	B2
3P01	B3
3P02	C3
3P03	B5
3P04	B5
3P05	C5
3P06	B5
3P07	D2
3P08	D2
3P09	E3
3P10	D5
3P11	E5
3P12	E2
3P13	F2
3P14	F5
3P15	G5
3P16	H5
3P17	G2
3P18	G2
3P19	G2
3P20	H1
3P21	C7
3P22	B10
3P23	B10
3P24	B11
3P25	D7
3P26	D7
3P27	E6
3P28	E6
3P29	E11
3P30	F9
3P31	F7
3P32	F7
3P34	G9
3P35	G9
3P36	H7
3P37	H7
3P38	H6
3P39	G7
3P40	F6
3P41	D13
3P42	D13
3P43	D13
3P44	F9
3P45	H11
3P46	H11
3P47	I12
3P48	B7
3P90	E12
3P91	E13
3P92	E14
3P93	E14
5P00	B2
5P01	B3
5P02	C1
5P03	B1
5P04	D3
5P05	E5
5P06	E6
5P07	H2
5P08	D6
5P09	B7
5P10	B7
6P00	E2
6P01	E2
6P02	G2
6P03	D2
7P00	D2
7P01	F2
7P02	H1
7P03	F5
7P04	G5
7P05	D6
7P06	E7
7P07	H7
7P08	F9
7P09	D9
7P10	D13
7P11	G11
9P00	B4
9P01	C3
9P02	D5
9P03	D6
9P04	E2
9P05	E5
9P06	E7
9P07	G7
9P08	G7
9P09	G6
9P10	F3
9P11	E3
9P12	G8
9P13	D11
9P14	G6
9P15	E7
9P16	E2
9P17	H7
9P18	G7
9P19	I6
9P20	F11
9P21	G11
9P22	G11
9P23	I6
9P24	G9
9P25	F9
9P26	E11
9P27	E11
9P28	F12
9P29	F13
AP02	C1
AP04	C4
AP05	C4
AP06	C5
AP07	C5
AP09	G3
FP02	B8
FP03	C1
FP08	B5
FP11	I7
FP12	H9
FP13	F7
FP14	E6
FP15	D7
FP16	D7
FP17	F7
FP23	B11
FP24	D12
FP25	D12
FP26	D12
FP27	D5
FP29	H11
FP36	G9
FP37	C12
FP38	C12
FP39	C12
FP40	C12
FP41	H8
FP42	H9
IP00	B5
IP01	E5
IP02	B5
IP03	E5
IP10	H8
IP17	C7
IP20	B8
IP21	B9
IP22	D5
IP23	B2
IP24	B3
IP25	B2
IP26	B4
IP27	B3
IP28	C3
IP29	C4
IP30	B3
IP31	B3
IP32	C3
IP33	B6
IP34	B7
IP35	B7
IP36	B10
IP37	H11
IP38	H11
IP39	H12
IP40	G13
IP41	G14
IP42	H13
IP43	H14
cP00	B8

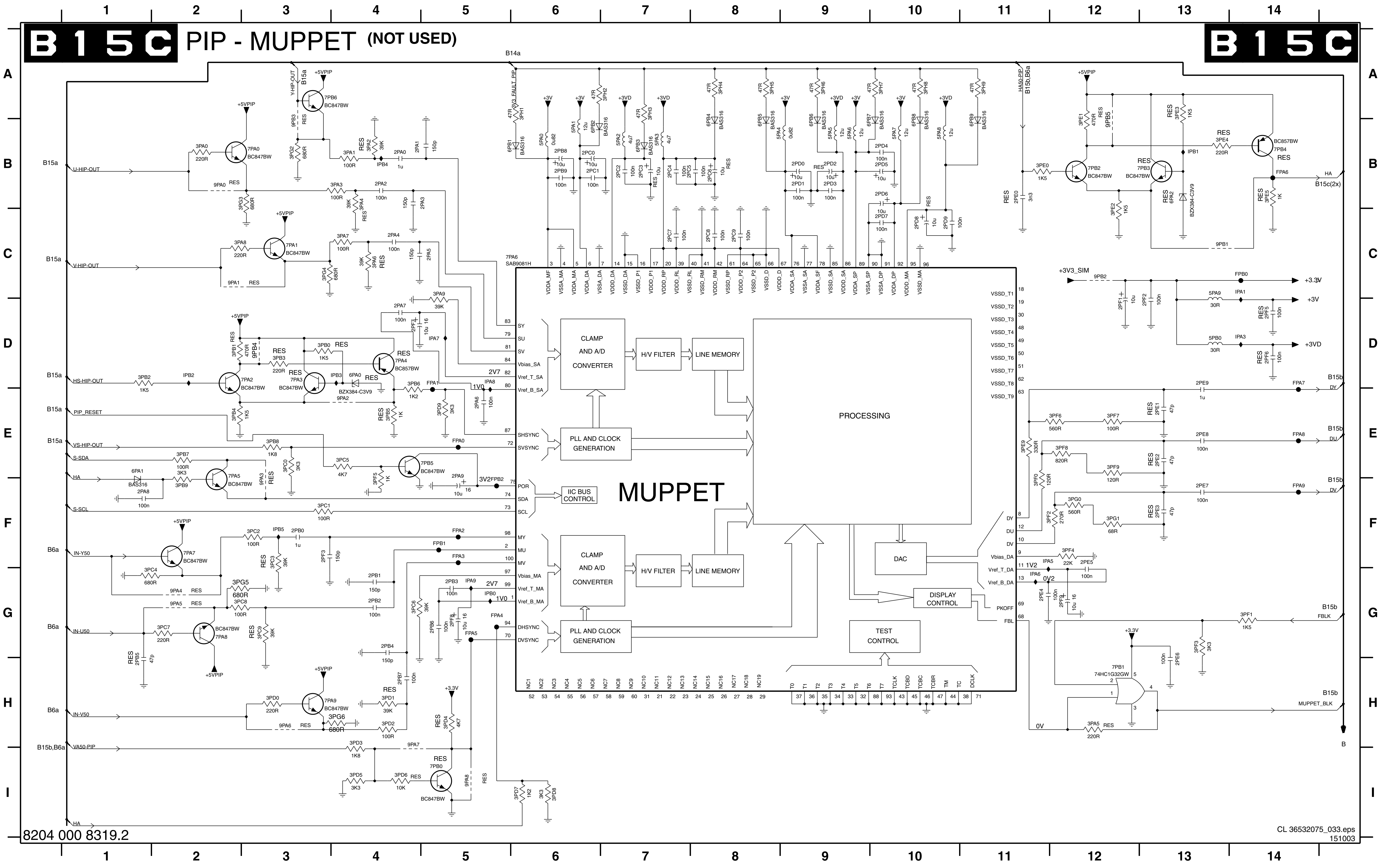
Small Signal Board: PIP

1P50 D2
2P50 D4
2P51 E1
2P52 E2
2P53 E2
2P54 F2
2P55 F2
2P56 G5
2P57 G5
2P58 F5
2P59 E5
2P60 E5
2P61 E6
2P62 F5
2P63 F10
2P64 F10
2P65 G9
2P66 H9
2P67 H9
2P68 H9
2P69 H9
2P70 D6
2P71 D15
2P72 D6
2P73 D8
2P74 C6
2P75 A8
2P76 D1
2P77 D4
2P78 E12
2P79 E12
2P80 E14
2P81 E14
2P82 G10
2P83 G10
2P84 F10
2P85 F10
2P86 A4
2P87 C2
2P88 C1
2P90 D5
3P50 D1
3P51 D1
3P52 D4
3P53 E2
3P54 F2
3P55 H5
3P56 G4
3P57 G5
3P58 G5
3P59 F5
3P60 F5
3P61 D7
3P62 G9
3P63 F9
3P64 F9
3P65 G15
3P66 G15
3P67 F14
3P68 F14
3P69 E14
3P70 E14
3P72 E14
3P74 D15
3P75 E5
3P76 F4
3P77 B3
3P78 B4
3P79 C4
3P80 C2
3P81 D4
3P82 C2
3P85 F14
3P86 B9
3P87 B9
3P88 D5
5P50 D4
5P51 E15
7P50 A3
7P51 C3
7P52 F4
7P53 G4
7P54 E6
7P55 B6
7P56 F13
7P57 A12
9P52 F4
9P53 G4
9P54 H5
9P55 C12
9P56 C12
9P57 D12
9P58 D11
9P59 C9
9P60 C8
9P63 B9
9P64 B9
9P65 C10
9P69 H13
9P70 H13
9P71 H13
FP50 D15
FP51 G10
FP52 F10
FP53 F10
FP54 D12
FP55 E15
FP56 B8
FP57 G6
FP59 F15
FP60 G10
IP50 C2
IP51 D3
IP52 F5
IP53 D2
IP54 D2
IP55 G5
IP56 D14
IP57 D7
IP58 D6
IP59 B8
IP60 C6
IP61 D8
IP62 C14

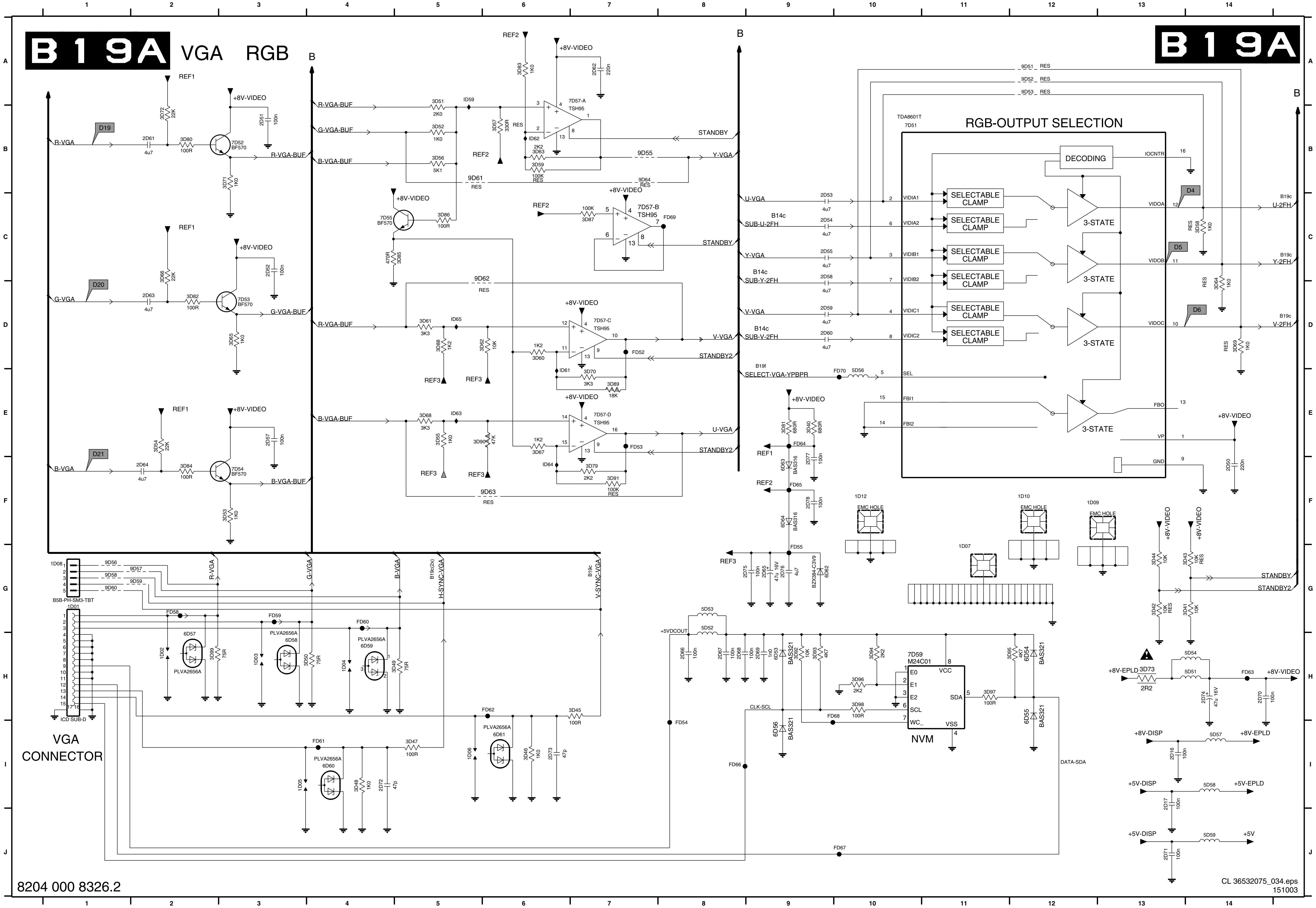

B15B
PIP (NOT USED)
B15B
NVM
7P50
M24C32
V-CHIP(US ONLY)
7P51
Z86130
AUDIO DEMODULATOR
7P55
TDA9820T/V1
7 STAGE LIMITER AMPLIFIER 1
7 STAGE LIMITER AMPLIFIER 2
VCO1
VCO2
CONTROL UNIT
SUPPLY
VIDEO SWITCH
TDA8601T
7P54
DECODING
SELECTABLE CLAMP
3-STATE
7P57
74HC4053
I/O EXPANDER
7P56
M62320
I/O PORT
DATA LATCHES
TRANSCEIVER C BUS
REG SHIFT
CHIP SELECT
RES PWR
V33
V34
V35
V36
V37
V38
V39
B1-B20
S-SCL
S-SDA
V-CHIP_IN
MONO-PIP
PIP-CVBS-MON
SUB-Y
SIF-OUT
SEL_PIP_CVBS_SOUND
SEL_PIP_SOUND1
SEL_PIP_SOUND2
HA50-PIP
Y-PIP+MAIN-OUT
U-PIP+MAIN-OUT
V-PIP+MAIN-OUT
SWITCH_HEF
PIP_RESET
FBLK
SWITCH_HEF-SUB
MUPPET_BLK
8204 000 8319.2
CL 36532075_032.eps
161003

Small Signal Board: PIP Muppet

2PA0 B4
2PA1 B4
2PA2 B4
2PA3 B5
2PA4 C4
2PA5 C5
2PA6 E5
2PA7 D4
2PA8 F1
2PA9 E5
2PB0 F3
2PB1 G4
2PB2 G4
2PB3 G5
2PB4 G4
2PB5 H1
2PB6 G5
2PB7 H4
2PB8 B6
2PB9 B6
2PC0 B6
2PC1 B6
2PC2 B7
2PC3 B7
2PC4 B7
2PC5 B8
2PC6 B8
2PC7 C7
2PC8 C8
2PC9 C8
2PD0 B9
2PD1 B9
2PD2 B9
2PD3 B9
2PD4 B10
2PD5 B10
2PD6 B10
2PD7 C10
2PD8 C10
2PD9 C10
2PE0 B11
2PE1 E13
2PE2 E13
2PE3 F13
2PE4 G11
2PE5 F12
2PE6 H13
2PE7 F13
2PE8 E13
2PE9 D13
2PF1 D12
2PF2 D13
2PF3 F3
2PF5 D14
2PF6 D14
2PF7 D4
2PF8 G5
2PF9 G12
3PA0 B2
3PA1 B4
3PA2 B4
3PA3 B4
3PA4 B4
3PA5 H12
3PA6 C4
3PA7 C4
3PA8 C2
3PA9 C5
3PB0 D3
3PB1 D2
3PB2 D1
3PB3 D3
3PB4 E2
3PB5 E4
3PB6 D4
3PB7 E2
3PB8 E3
3PB9 F2
3PC0 E3
3PC1 F3
3PC2 F3
3PC3 F3
3PC4 G1
3PC5 E4
3PC6 G4
3PC7 G2
3PC8 G2
3PC9 G3
3PD0 H3
3PD1 H4
3PD2 H4
3PD3 H4
3PD4 H5
3PD5 I4
3PD6 I4
3PD7 I6
3PD8 I6
3PD9 E5
3PE0 B11
3PE1 B12
3PE2 C12
3PE3 A13
3PE4 B13
3PE5 B14
3PE9 E11
3PF0 F11
3PF1 G14
3PF2 F12
3PF3 G13
3PF4 F12
3PF5 F4
3PF6 E12
3PF7 E12
3PF8 E12
3PF9 E12
3PG0 F12
3PG1 F12
3PG2 B3
3PG3 B3
3PG4 C3
3PG5 G2
3PG6 H4
3PH1 A6
3PH2 A7
3PH3 A7
3PH4 A8
3PH5 A8
3PH6 A9
3PH7 A10
3PH8 A10
3PH9 A11
5PA0 B6
5PA1 B6
5PA2 B7
5PA3 B7
5PA4 B9
5PA5 B9
5PA6 B9
5PA7 B10
5PA8 B10
5PA9 C13
5PB0 D13
6PA0 D4
6PA1 E1
6PA2 B13
6PB1 B6
6PB2 B6
6PB3 B7
6PB4 B8
6PB5 B8
6PB6 B9
6PB7 B10
6PB8 B10
6PB9 B11
7PA0 B3
7PA1 C3
7PA2 D2
7PA3 D3
7PA4 D4
7PA5 E2
7PA6 C5
7PA7 F2
7PA8 G2
7PA9 H3
7PB0 I5
7PB1 H12
7PB2 B12
7PB3 B13
7PB4 B14
7PB5 E4
7PB6 A3
9PA0 B2
9PA1 C2
9PA2 E4
9PA3 F3
9PA4 G2
9PA5 G2
9PA6 H3
9PA7 H4
9PA8 I5
9PB1 C13
9PB2 C12
9PB3 B3
9PB4 D3
9PB5 B12
FPA0 E5
FPA1 D5
FPA2 F5
FPA3 F5
FPA4 G5
FPA5 G5
FPA6 B14
FPA7 D14
FPA8 E14
FPA9 F14
FPB0 C14
FPB1 F5
FPB2 F5
IPA1 C14
IPA3 D14
IPA5 F11
IPA6 G11
IPA7 D5
IPA8 D5
IPA9 G5
IPB0 G5
IPB1 B13
IPB2 D2
IPB3 D4
IPB4 B4
IPB5 F3

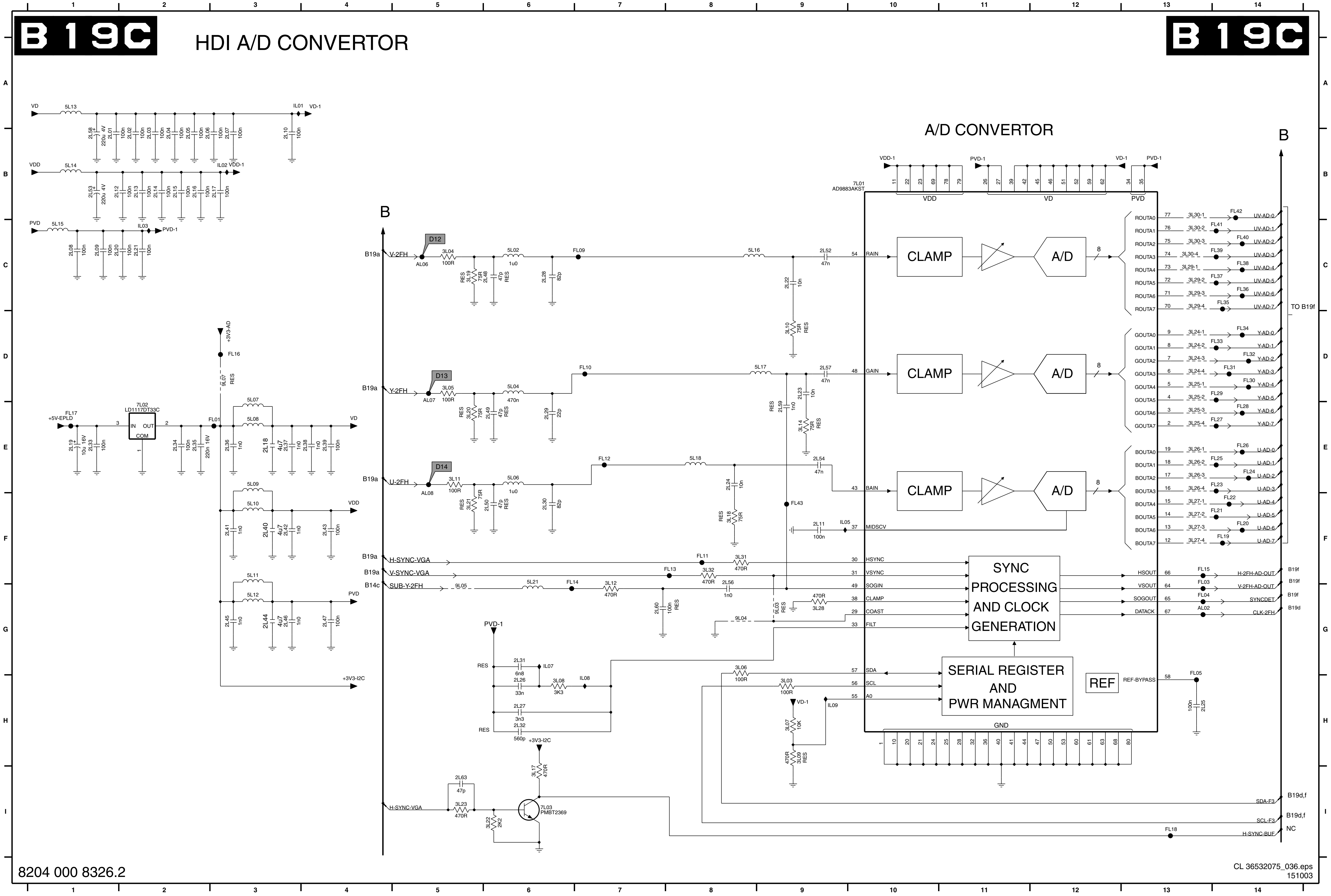

B15C
PIP - MUPPET
(NOT USED)
B 15 C
MUPPET
7PA6 SAB9081H
CLAMP AND A/D CONVERTER
H/V FILTER
LINE MEMORY
PROCESSING
PLL AND CLOCK GENERATION
IIC BUS CONTROL
DAC
DISPLAY CONTROL
TEST CONTROL
B15a U-HIP-OUT
B15a V-HIP-OUT
B15a HS-HIP-OUT
B15a PIP_RESET
B15a VS-HIP-OUT
S-SDA
HA
S-SCL
B6a IN-Y50
B6a IN-U50
B6a IN-V50
B15b,B6a VA50-PIP
HA
B14a
Y-HIP-OUT
B15a
V3_FAULT_PIP
HA50-PIP B15b,B6a
+3V3_SIM
+3.3V
+3V
+3VD
B15b DY
B15b DU
B15b DV
B15b FBLK
B15b MUPPET_BLK
HA B15c(2x)
7PB1 74HC1G32GW
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
8204 000 8319.2
CL 36532075_033.eps
151003

Small Signal Board: VGA RGB


B19A VGA RGB
B19A
RGB-OUTPUT SELECTION
DECODING
SELECTABLE CLAMP
3-STATE
TDA8601T
7D51
VGA CONNECTOR
ICD SUB-D
1D01
1D08
B5B-PH-SM3-TBT
NVM
7D59
M24C01
R-VGA
G-VGA
B-VGA
R-VGA-BUF
G-VGA-BUF
B-VGA-BUF
H-SYNC-VGA
V-SYNC-VGA
U-VGA
Y-VGA
V-VGA
SUB-U-2FH
SUB-Y-2FH
SUB-V-2FH
SELECT-VGA-YPBPR
STANDBY
STANDBY2
U-2FH
Y-2FH
V-2FH
REF1
REF2
REF3
+8V-VIDEO
+8V-EPLD
+8V-DISP
+5V-DISP
+5V-EPLD
+5V
+5VDCOUT
CLK-SCL
DATA-SDA
EMC HOLE
7D52 BF570
7D53 BF570
7D54 BF570
7D55 BF570
7D57-A TSH95
7D57-B TSH95
7D57-C TSH95
7D57-D TSH95
PLVA2656A
BAS316
BAS321
BZX384-C3V9
D19
D20
D21
D4
D5
D6
8204 000 8326.2
CL 36532075_034.eps
151003

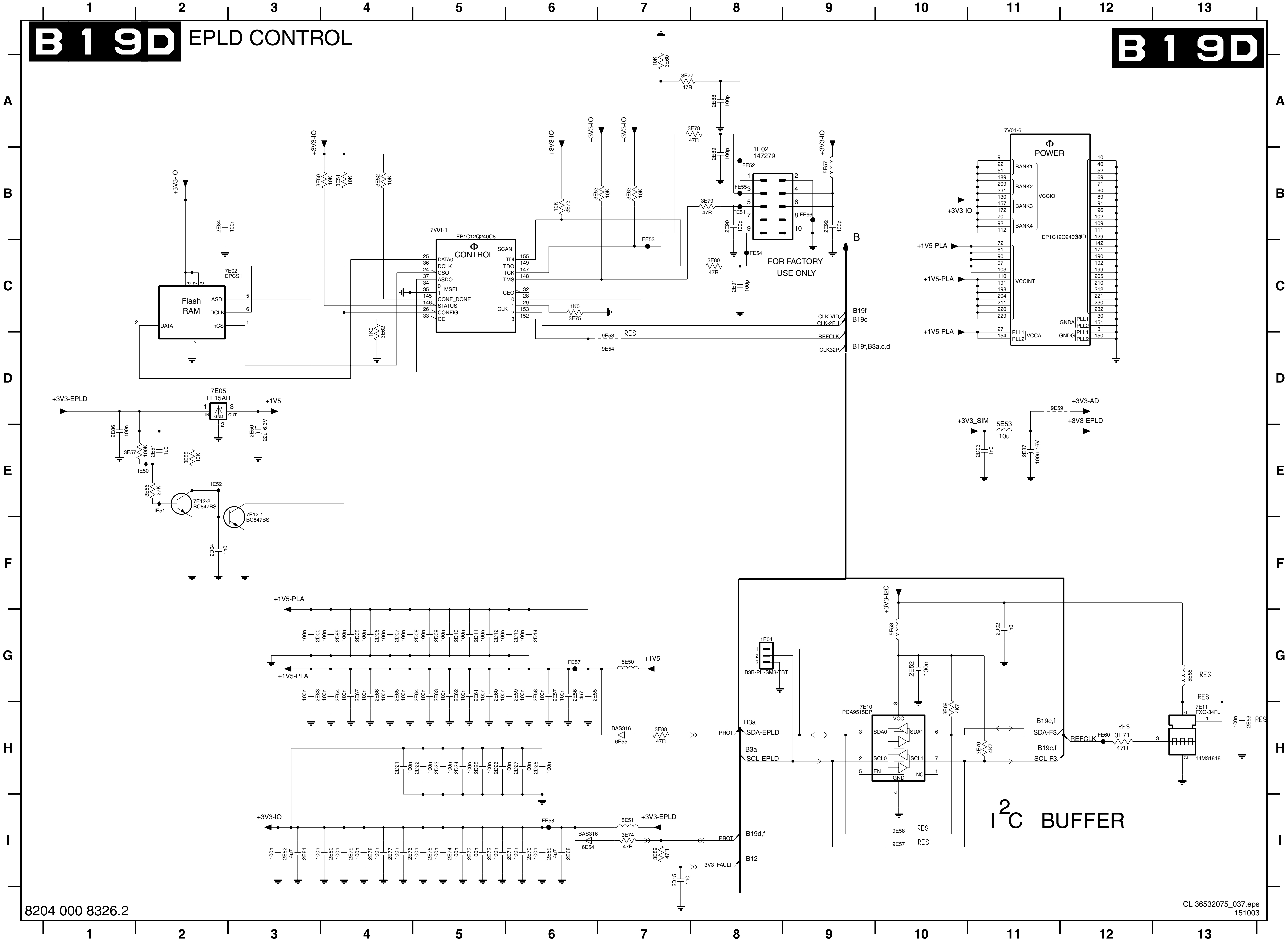
1D01	G1
1D02	H2
1D03	H3
1D04	H4
1D05	I3
1D06	I5
1D07	G11
1D08	G1
1D09	F11
1D10	F12
1D12	F10
2D16	I13
2D17	I13
2D50	F14
2D51	B3
2D52	C3
2D53	C9
2D54	C9
2D55	C9
2D57	E3
2D58	C9
2D59	D9
2D60	D9
2D61	B2
2D62	A7
2D63	D2
2D64	F2
2D65	G9
2D66	H8
2D67	H8
2D68	H8
2D69	H9
2D70	H14
2D71	J13
2D72	I4
2D73	I6
2D74	H14
2D75	G9
2D76	G9
2D77	F9
2D78	F9
3D40	E9
3D41	G14
3D42	G13
3D43	G14
3D44	G13
3D45	H7
3D46	I6
3D47	I5
3D48	I4
3D49	H5
3D50	H4
3D51	A5
3D52	B5
3D53	F3
3D54	E2
3D55	E5
3D56	B5
3D57	B6
3D58	C14
3D59	B6
3D60	D6
3D61	D5
3D62	D6
3D63	B6
3D64	D14
3D65	D3
3D66	C2
3D67	E6
3D68	E5
3D69	D14
3D70	E7
3D71	B3
3D72	B2
3D73	H13
3D79	F7
3D80	B2
3D81	E9
3D82	D2
3D83	A6
3D84	F2
3D85	C5
3D86	C5
3D87	C7
3D88	D5
3D89	E7
3D90	E5
3D91	F7
3D92	H9
3D93	H9
3D94	H10
3D95	H12
3D96	H10
3D97	H11
3D98	H10
3D99	H2
5D51	H14
5D52	G8
5D53	G8
5D54	H14
5D56	E10
5D57	I14
5D58	I14
5D59	J14
6D53	H9
6D54	H12
6D55	H12
6D56	I9
6D57	G2
6D58	H3
6D59	H4
6D60	I4
6D61	I6
6D62	G9
6D63	F9
6D64	F9
7D51	B10
7D52	B3
7D53	D3
7D54	F3
7D55	C4
7D57-A	A6
7D57-B	C7
7D57-C	D7
7D57-D	E7
7D59	H10
9D51	A12
9D52	A12
9D53	A12
9D55	B7
9D56	G1
9D57	G2
9D58	G1
9D59	G2
9D60	G1
9D61	B5
9D62	C5
9D63	F6
9D64	B7
FD52	D7
FD53	E7
FD54	I8
FD55	G9
FD58	G2
FD59	G3
FD60	G4
FD61	I4
FD62	H6
FD63	H14
FD64	E9
FD65	F9
FD66	I8
FD67	J10
FD68	H9
FD69	C8
FD70	E10
ID59	A5
ID61	E6
ID62	B6
ID63	E5
ID64	F6
ID65	D5

Small Signal Board: HDI A/D Convertor


B19C
HDI A/D CONVERTOR
B19C
A/D CONVERTOR
7L01
AD9883AKST
VDD
VD
PVD
VDD-1
PVD-1
VD-1
CLAMP
A/D
CLAMP
A/D
CLAMP
A/D
SYNC PROCESSING AND CLOCK GENERATION
SERIAL REGISTER AND PWR MANAGMENT
REF
GND
RAIN
GAIN
BAIN
MIDSCV
HSYNC
VSYNC
SOGIN
CLAMP
COAST
FILT
SDA
SCL
A0
REF-BYPASS
HSOUT
VSOUT
SOGOUT
DATACK
ROUTA0
ROUTA1
ROUTA2
ROUTA3
ROUTA4
ROUTA5
ROUTA6
ROUTA7
GOUTA0
GOUTA1
GOUTA2
GOUTA3
GOUTA4
GOUTA5
GOUTA6
GOUTA7
BOUTA0
BOUTA1
BOUTA2
BOUTA3
BOUTA4
BOUTA5
BOUTA6
BOUTA7
UV-AD-0
UV-AD-1
UV-AD-2
UV-AD-3
UV-AD-4
UV-AD-5
UV-AD-6
UV-AD-7
Y-AD-0
Y-AD-1
Y-AD-2
Y-AD-3
Y-AD-4
Y-AD-5
Y-AD-6
Y-AD-7
U-AD-0
U-AD-1
U-AD-2
U-AD-3
U-AD-4
U-AD-5
U-AD-6
U-AD-7
TO B19f
H-2FH-AD-OUT
V-2FH-AD-OUT
SYNCDET
CLK-2FH
SDA-F3
SCL-F3
H-SYNC-BUF
B19f
B19d
B19d,f
NC
B19a
V-2FH
Y-2FH
U-2FH
H-SYNC-VGA
V-SYNC-VGA
B14c
SUB-Y-2FH
D12
D13
D14
7L02
LD1117DT33C
IN
OUT
COM
+5V-EPLD
+3V3-AD
+3V3-I2C
VD
VDD
PVD
7L03
PMBT2369
8204 000 8326.2
CL 36532075_036.eps
151003

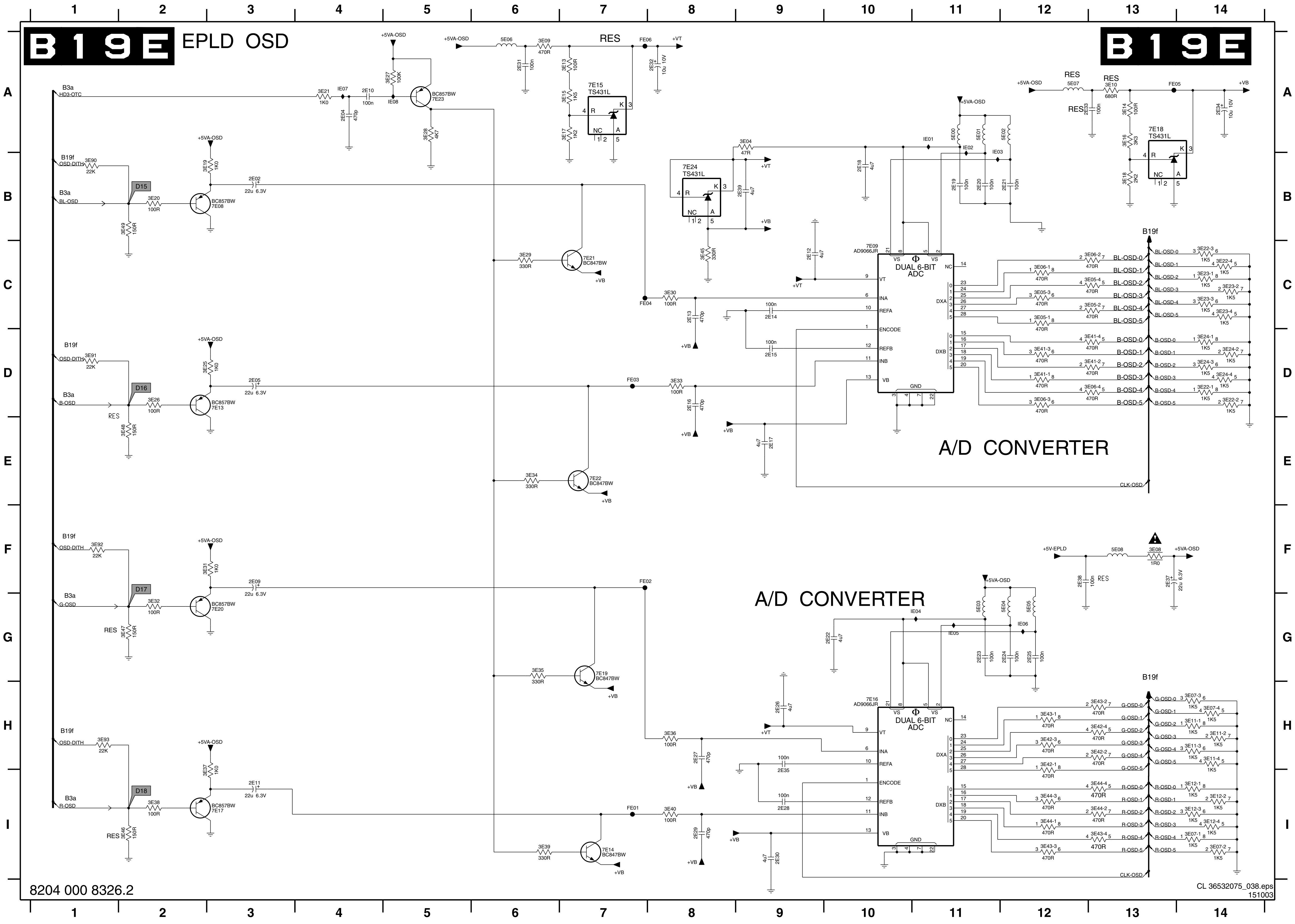
2L01	B1
2L02	B2
2L03	B2
2L04	B2
2L05	B2
2L06	B2
2L07	B3
2L08	C1
2L09	C1
2L10	B3
2L11	F9
2L12	B1
2L13	B2
2L14	B2
2L15	B2
2L16	B2
2L17	B3
2L18	E3
2L19	E1
2L20	C1
2L21	C2
2L22	C9
2L23	D9
2L24	E8
2L25	H13
2L26	H6
2L27	H6
2L28	C6
2L29	E6
2L30	F6
2L31	G6
2L32	H6
2L33	E1
2L34	E2
2L35	E2
2L36	E3
2L37	E3
2L38	E4
2L39	E4
2L40	F3
2L41	F3
2L42	F3
2L43	F4
2L44	G3
2L45	G3
2L46	G3
2L47	G4
2L48	C5
2L49	E6
2L50	F6
2L52	C9
2L53	B1
2L54	E9
2L56	G8
2L57	D9
2L58	B1
2L59	E9
2L60	G7
2L63	I5
3L03	H9
3L04	C5
3L05	D5
3L06	G8
3L07	H9
3L08	H6
3L09	H9
3L10	D9
3L11	E5
3L12	G7
3L14	E9
3L17	I6
3L18	F8
3L19	C5
3L20	E5
3L21	F5
3L22	I6
3L23	I5
3L24-1	D13
3L24-2	D13
3L24-3	D13
3L24-4	D13
3L25-1	D13
3L25-2	D13
3L25-3	E13
3L25-4	E13
3L26-1	E13
3L26-2	E13
3L26-3	E13
3L26-4	E13
3L27-1	F13
3L27-2	F13
3L27-3	F13
3L27-4	F13
3L28	G9
3L29-1	C13
3L29-2	C13
3L29-3	C13
3L29-4	C13
3L30-1	B13
3L30-2	C13
3L30-3	C13
3L30-4	C13
3L31	F8
3L32	F8
5L02	C6
5L04	D6
5L06	E6
5L07	D3
5L08	E3
5L09	E3
5L10	F3
5L11	F3
5L12	G3
5L13	A1
5L14	B1
5L15	C1
5L16	C8
5L17	D9
5L18	E8
5L21	F6
7L01	B10
7L02	E2
7L03	I6
9L03	G9
9L04	G8
9L05	G5
9L07	D3
AL02	G13
AL06	C5
AL07	E5
AL08	F5
FL01	E3
FL03	F13
FL04	G13
FL05	G13
FL09	C7
FL10	D7
FL11	F8
FL12	E7
FL13	F8
FL14	F6
FL15	F13
FL16	D3
FL17	E1
FL18	I13
FL19	F14
FL20	F14
FL21	F14
FL22	F14
FL23	E14
FL24	E14
FL25	E14
FL26	E14
FL27	E14
FL28	E14
FL29	D14
FL30	D14
FL31	D14
FL32	D14
FL33	D14
FL34	D14
FL35	C14
FL36	C14
FL37	C14
FL38	C14
FL39	C14
FL40	C14
FL41	C14
FL42	B14
FL43	F9
IL01	A3
IL02	B3
IL03	C2
IL05	F9
IL07	G6
IL08	H7
IL09	H9

Small Signal Board: EPLD Control


B19D
EPLD CONTROL
B19D
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
Flash RAM
7E02 EPCS1
7V01-1 EP1C12Q240C8
CONTROL
7V01-6
POWER
EP1C12Q240C8
BANK1
BANK2
BANK3
BANK4
VCCIO
VCCINT
VCCA
GND
GNDA
GNDG
1E02 147279
FOR FACTORY USE ONLY
+3V3-IO
+1V5-PLA
+3V3-EPLD
+1V5
7E05 LF15AB
7E12-2 BC847BS
7E12-1 BC847BS
+3V3_SIM
5E53 10u
+3V3-AD
CLK-VID
CLK-2FH
REFCLK
CLK32P
B19f
B19c
B19f,B3a,c,d
RES
1E04
B3B-PH-SM3-TBT
+3V3-I2C
7E10 PCA9515DP
SDA-EPLD
SCL-EPLD
SDA-F3
SCL-F3
B3a
B19c,f
PROT
3V3_FAULT
B19d,f
B12
BAS316
7E11 FXO-34FL
14M31818
I²C BUFFER
8204 000 8326.2
CL 36532075_037.eps
151003

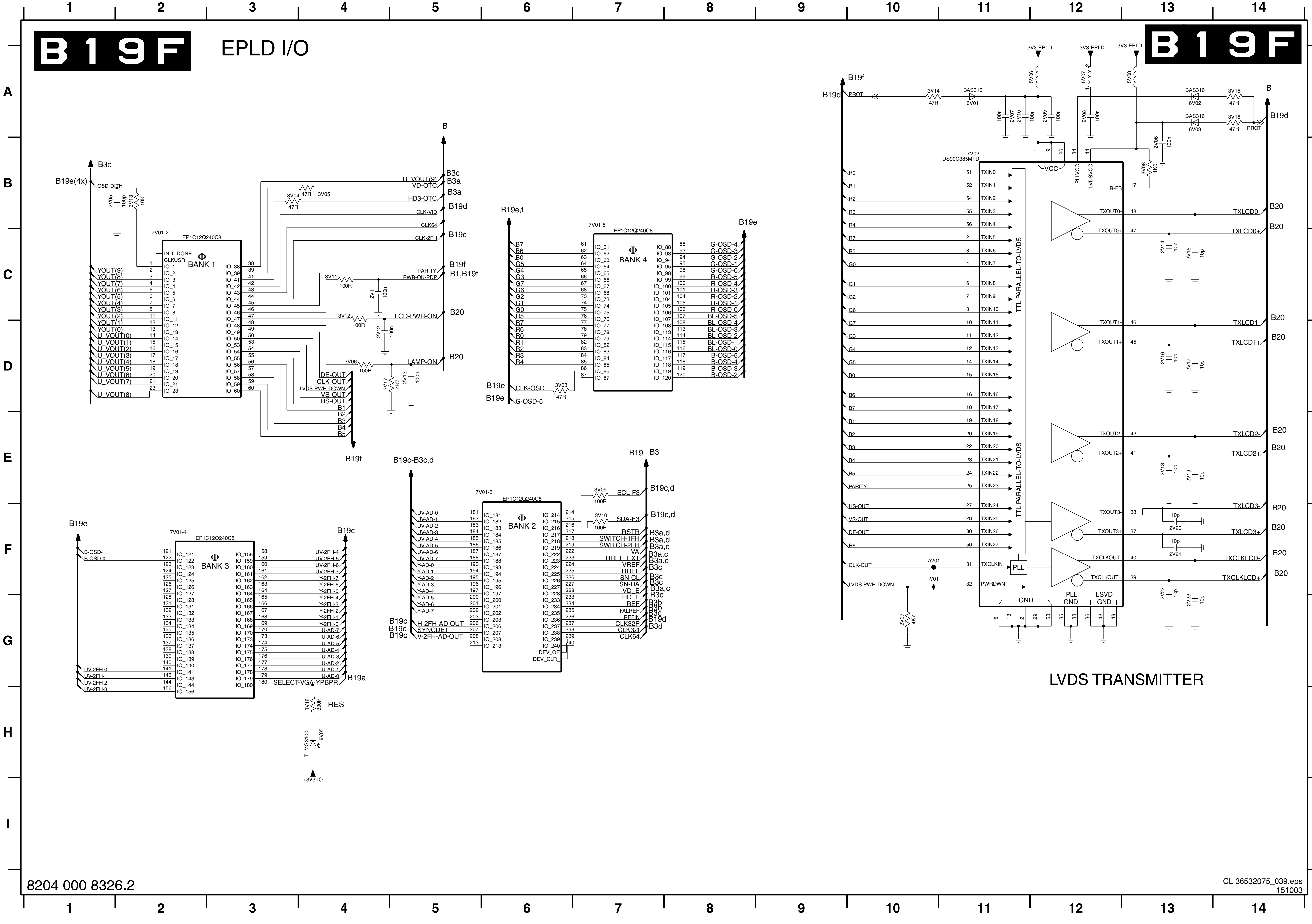
1E02	B8
1E04	G8
2D00	G3
2D02	G11
2D03	E11
2D04	F2
2D05	G4
2D06	G4
2D07	G4
2D08	G5
2D09	G5
2D10	G5
2D11	G5
2D12	G5
2D13	G6
2D14	G6
2D15	I7
2D21	H4
2D22	H5
2D23	H5
2D24	H5
2D25	H5
2D26	H5
2D27	H6
2D28	H6
2D85	G4
2E50	E3
2E51	E2
2E52	G10
2E53	H13
2E54	G4
2E55	G6
2E56	G6
2E57	G6
2E58	G6
2E59	G6
2E60	G5
2E61	G5
2E62	G5
2E63	G5
2E64	G5
2E65	G4
2E66	G4
2E67	G4
2E68	I6
2E69	I6
2E70	I6
2E71	I6
2E72	I5
2E73	I5
2E74	I5
2E75	I5
2E76	I4
2E77	I4
2E78	I4
2E79	I4
2E80	I4
2E81	I3
2E82	I3
2E83	G3
2E84	B2
2E86	E1
2E87	E11
2E88	A8
2E89	B8
2E90	B8
2E91	C8
2E92	B9
3E50	B3
3E51	B4
3E52	B4
3E53	B6
3E55	E2
3E56	E2
3E57	E1
3E60	A7
3E62	D4
3E63	B7
3E69	H10
3E70	H11
3E71	H12
3E73	B6
3E74	I7
3E75	C6
3E77	A7
3E78	A8
3E79	B8
3E80	C8
3E88	H7
3E89	I7
5E50	G7
5E51	I7
5E53	E11
5E55	G13
5E57	B9
5E58	G10
6E54	I6
6E55	H7
7E02	C2
7E05	D2
7E10	H9
7E11	H13
7E12-1	E3
7E12-2	E2
7V01-1	B5
7V01-6	A11
9E53	D7
9E54	D7
9E57	I10
9E58	I10
9E59	D11
FE51	B8
FE52	B8
FE53	C7
FE54	C8
FE55	B8
FE57	G6
FE58	I6
FE60	H12
FE66	B9
IE50	E2
IE51	E2
IE52	E2

Small Signal Board: EPLD OSD


B19E
EPLD OSD
A/D CONVERTER
A/D CONVERTER
DUAL 6-BIT ADC
7E09 AD9066JR
7E16 AD9066JR
7E15 TS431L
7E18 TS431L
7E24 TS431L
7E08 BC857BW
7E13 BC857BW
7E20 BC857BW
7E17 BC857BW
7E23 BC857BW
7E21 BC847BW
7E22 BC847BW
7E19 BC847BW
7E14 BC847BW
D15
D16
D17
D18
B3a
B19f
HD3-OTC
OSD-DITH
BL-OSD
B-OSD
G-OSD
R-OSD
CLK-OSD
+5VA-OSD
+5V-EPLD
+VT
+VB
RES
8204 000 8326.2
CL 36532075_038.eps
151003

2E02	B3
2E04	A4
2E05	D3
2E09	F3
2E10	A4
2E11	I3
2E12	C9
2E13	C8
2E14	C9
2E15	D9
2E16	D8
2E17	E9
2E18	B10
2E19	B11
2E20	B11
2E21	B12
2E22	G10
2E23	G11
2E24	G12
2E25	G12
2E26	H9
2E27	H8
2E28	I9
2E29	I8
2E30	I9
2E31	A6
2E32	A8
2E33	A12
2E34	A14
2E35	H9
2E37	F13
2E38	F12
2E39	B9
3E04	A9
3E05-A	C12
3E05-B	C13
3E05-C	C12
3E05-D	C13
3E06-A	C12
3E06-B	C13
3E06-C	D12
3E06-D	D13
3E07-1	I14
3E07-2	I14
3E07-3	H14
3E07-4	H14
3E08	F13
3E09	A6
3E10	A13
3E11-1	H14
3E11-2	H14
3E11-3	H14
3E11-4	H14
3E12-1	I14
3E12-2	I14
3E12-3	I14
3E12-4	I14
3E13	A7
3E14	A13
3E15	A7
3E16	A13
3E17	A7
3E18	B13
3E19	B2
3E20	B2
3E21	A4
3E22-1	D14
3E22-2	D14
3E22-3	C14
3E22-4	C14
3E23-1	C14
3E23-2	C14
3E23-3	C14
3E23-4	C14
3E24-1	D14
3E24-2	D14
3E24-3	D14
3E24-4	D14
3E25	D2
3E26	D2
3E27	A5
3E28	A5
3E29	C6
3E30	C8
3E31	F2
3E32	G2
3E33	D8
3E34	E6
3E35	G6
3E36	H8
3E37	I2
3E38	I2
3E39	I6
3E40	I8
3E41-A	D12
3E41-B	D13
3E41-C	D12
3E41-D	D13
3E42-A	H12
3E42-B	H13
3E42-C	H12
3E42-D	H13
3E43-A	H12
3E43-B	H13
3E43-C	I12
3E43-D	I13
3E44-A	I12
3E44-B	I13
3E44-C	I12
3E44-D	I13
3E45	C8
3E46	I2
3E47	G2
3E48	E2
3E49	B2
3E90	B1
3E91	D1
3E92	F1
3E93	H1
5E00	A11
5E01	A11
5E02	A12
5E03	G11
5E04	G12
5E05	G12
5E06	A6
5E07	A12
5E08	F13
7E08	B3
7E09	C10
7E13	D3
7E14	I7
7E15	A7
7E16	H10
7E17	I3
7E18	A13
7E19	G7
7E20	G3
7E21	C7
7E22	E7
7E23	A5
7E24	B8
FE01	I7
FE02	F7
FE03	D7
FE04	C7
FE05	A13
FE06	A7
IE01	A11
IE02	A11
IE03	A11
IE04	G11
IE05	G11
IE06	G12
IE07	A4
IE08	A5

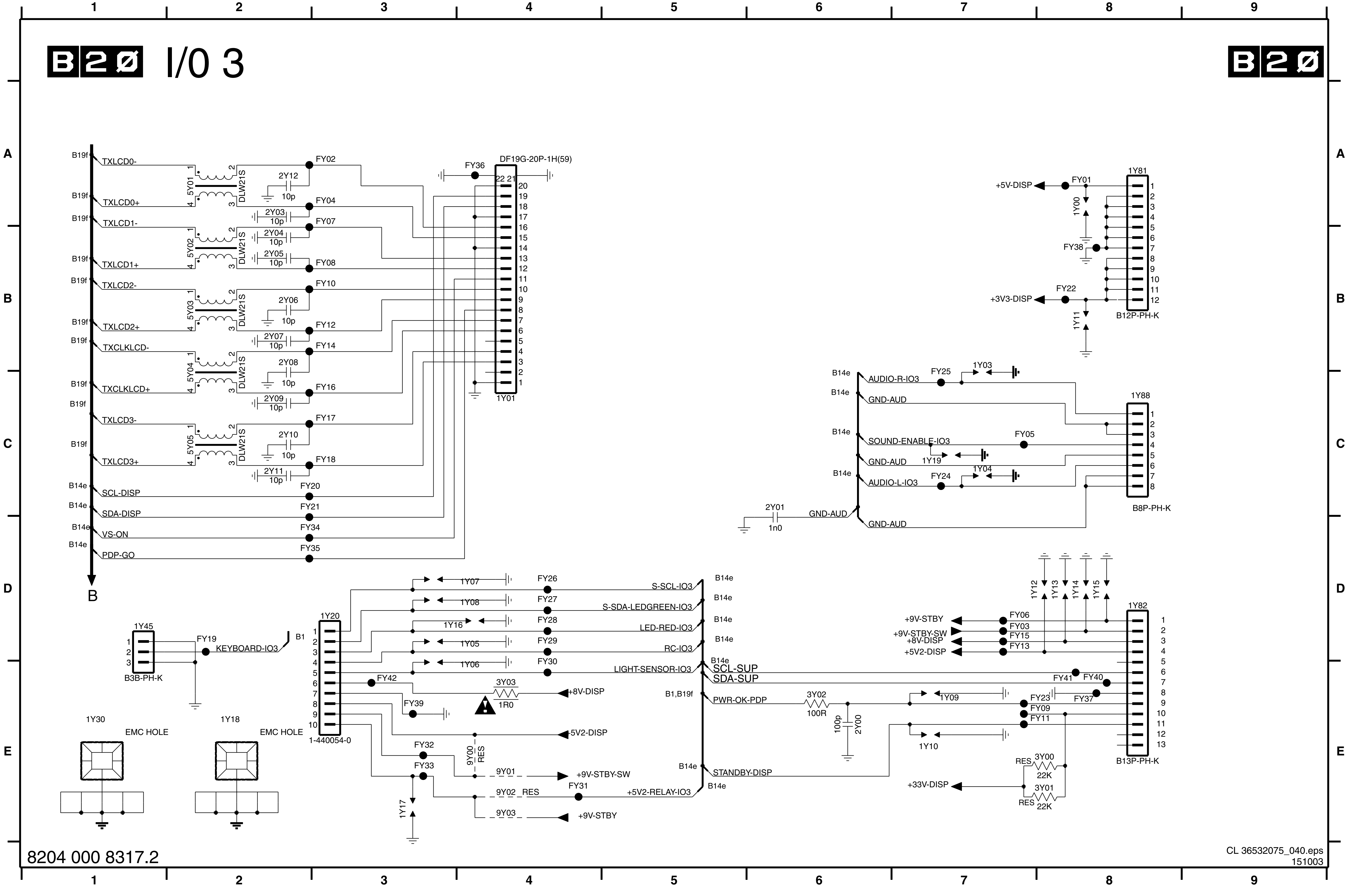
Small Signal Board: EPLD I/O


B19F
EPLD I/O
B19F
LVDS TRANSMITTER
7V01-2 EP1C12Q240C8 BANK 1
7V01-3 EP1C12Q240C8 BANK 2
7V01-4 EP1C12Q240C8 BANK 3
7V01-5 EP1C12Q240C8 BANK 4
7V02 DS90C385MTD
TTL PARALLEL-TO-LVDS
PLL
VCC
GND
PLL GND
LVSD GND
+3V3-EPLD
+3V3-IO
BAS316
TLMG3100
RES
YOUT(9)
YOUT(8)
YOUT(7)
YOUT(6)
YOUT(5)
YOUT(4)
YOUT(3)
YOUT(2)
YOUT(1)
YOUT(0)
U_VOUT(0)
U_VOUT(1)
U_VOUT(2)
U_VOUT(3)
U_VOUT(4)
U_VOUT(5)
U_VOUT(6)
U_VOUT(7)
U_VOUT(8)
U_VOUT(9)
OSD-DITH
VD-OTC
HD3-OTC
CLK-VID
CLK64
CLK-2FH
PARITY
PWR-OK-PDP
LCD-PWR-ON
LAMP-ON
DE-OUT
CLK-OUT
LVDS-PWR-DOWN
VS-OUT
HS-OUT
B1
B2
B3
B4
B5
CLK-OSD
G-OSD-5
G-OSD-4
G-OSD-3
G-OSD-2
G-OSD-1
G-OSD-0
R-OSD-5
R-OSD-4
R-OSD-3
R-OSD-2
R-OSD-1
R-OSD-0
BL-OSD-5
BL-OSD-4
BL-OSD-3
BL-OSD-2
BL-OSD-1
BL-OSD-0
B-OSD-5
B-OSD-4
B-OSD-3
B-OSD-2
B-OSD-1
B-OSD-0
UV-2FH-0
UV-2FH-1
UV-2FH-2
UV-2FH-3
UV-2FH-4
UV-2FH-5
UV-2FH-6
UV-2FH-7
Y-2FH-7
Y-2FH-6
Y-2FH-5
Y-2FH-4
Y-2FH-3
Y-2FH-2
Y-2FH-1
Y-2FH-0
U-AD-7
U-AD-6
U-AD-5
U-AD-4
U-AD-3
U-AD-2
U-AD-1
U-AD-0
SELECT-VGA-YPBPR
UV-AD-0
UV-AD-1
UV-AD-2
UV-AD-3
UV-AD-4
UV-AD-5
UV-AD-6
UV-AD-7
Y-AD-0
Y-AD-1
Y-AD-2
Y-AD-3
Y-AD-4
Y-AD-5
Y-AD-6
Y-AD-7
H-2FH-AD-OUT
SYNCDET
V-2FH-AD-OUT
SCL-F3
SDA-F3
RSTR
SWITCH-1FH
SWITCH-2FH
VA
HREF_EXT
VREF
HREF
SN-CL
SN-DA
VD_E
HD_E
REF
FALREF
REFIN
CLK32P
CLK32I
CLK64
DEV_OE
DEV_CLR
PROT
R-FB
TXOUT0-
TXOUT0+
TXOUT1-
TXOUT1+
TXOUT2-
TXOUT2+
TXOUT3-
TXOUT3+
TXCLKOUT-
TXCLKOUT+
TXLCD0-
TXLCD0+
TXLCD1-
TXLCD1+
TXLCD2-
TXLCD2+
TXLCD3-
TXLCD3+
TXLCLKLCD-
TXLCLKLCD+
B3c
B3a
B19d
B19c
B19f
B1,B19f
B20
B19e(4x)
B19e,f
B19e
B19c-B3c,d
B19
B3
B19a
8204 000 8326.2
CL 36532075_039.eps
151003

2V05	B1
2V06	B13
2V07	A11
2V08	A12
2V09	A12
2V10	A11
2V11	C4
2V12	D4
2V13	D5
2V14	C13
2V15	C13
2V16	D13
2V17	D13
2V18	E13
2V19	E13
2V20	F13
2V21	F13
2V22	F13
2V23	G13
3V03	D6
3V04	B3
3V05	B4
3V06	D4
3V07	G10
3V08	B13
3V09	E7
3V10	F7
3V11	C4
3V12	C4
3V13	B2
3V14	A10
3V15	A14
3V16	A14
3V17	D4
3V18	H4
5V06	A12
5V07	A12
5V08	A13
6V01	A11
6V02	A13
6V03	A13
6V05	H4
7V01-2	C2
7V01-3	E6
7V01-4	F2
7V01-5	B7
7V02	B11
AV01	F10
IV01	F10

Small Signal Board: I/O 3

1Y00 A8
1Y01 C4
1Y03 B7
1Y04 C7
1Y05 D4
1Y06 E4
1Y07 D4
1Y08 D4
1Y09 E7
1Y10 E7
1Y11 B8
1Y12 D7
1Y13 D8
1Y14 D8
1Y15 D8
1Y16 D3
1Y17 E3
1Y18 E2
1Y19 C7
1Y20 D3
1Y30 E1
1Y45 D1
1Y81 A8
1Y82 D8
1Y88 C8
2Y00 E6
2Y01 C6
2Y03 A2
2Y04 B2
2Y05 B2
2Y06 B2
2Y07 B2
2Y08 B2
2Y09 C2
2Y10 C2
2Y11 C2
2Y12 A2
3Y00 E8
3Y01 E8
3Y02 E6
3Y03 E4
5Y01 A2
5Y02 B2
5Y03 B2
5Y04 C2
5Y05 C2
9Y00 E4
9Y01 E4
9Y02 E4
9Y03 E4
FY01 A8
FY02 A3
FY03 D7
FY04 A3
FY05 C7
FY06 D7
FY07 A3
FY08 B3
FY09 E8
FY10 B3
FY11 E8
FY12 B3
FY13 D7
FY14 B3
FY15 D7
FY16 C3
FY17 C3
FY18 C3
FY19 D2
FY20 C2
FY21 C2
FY22 B8
FY23 E8
FY24 C7
FY25 C7
FY26 D4
FY27 D4
FY28 D4
FY29 D4
FY30 E4
FY31 E4
FY32 E3
FY33 E3
FY34 D2
FY35 D2
FY36 A4
FY37 E8
FY38 B8
FY39 E3
FY40 E8
FY41 E8
FY42 E3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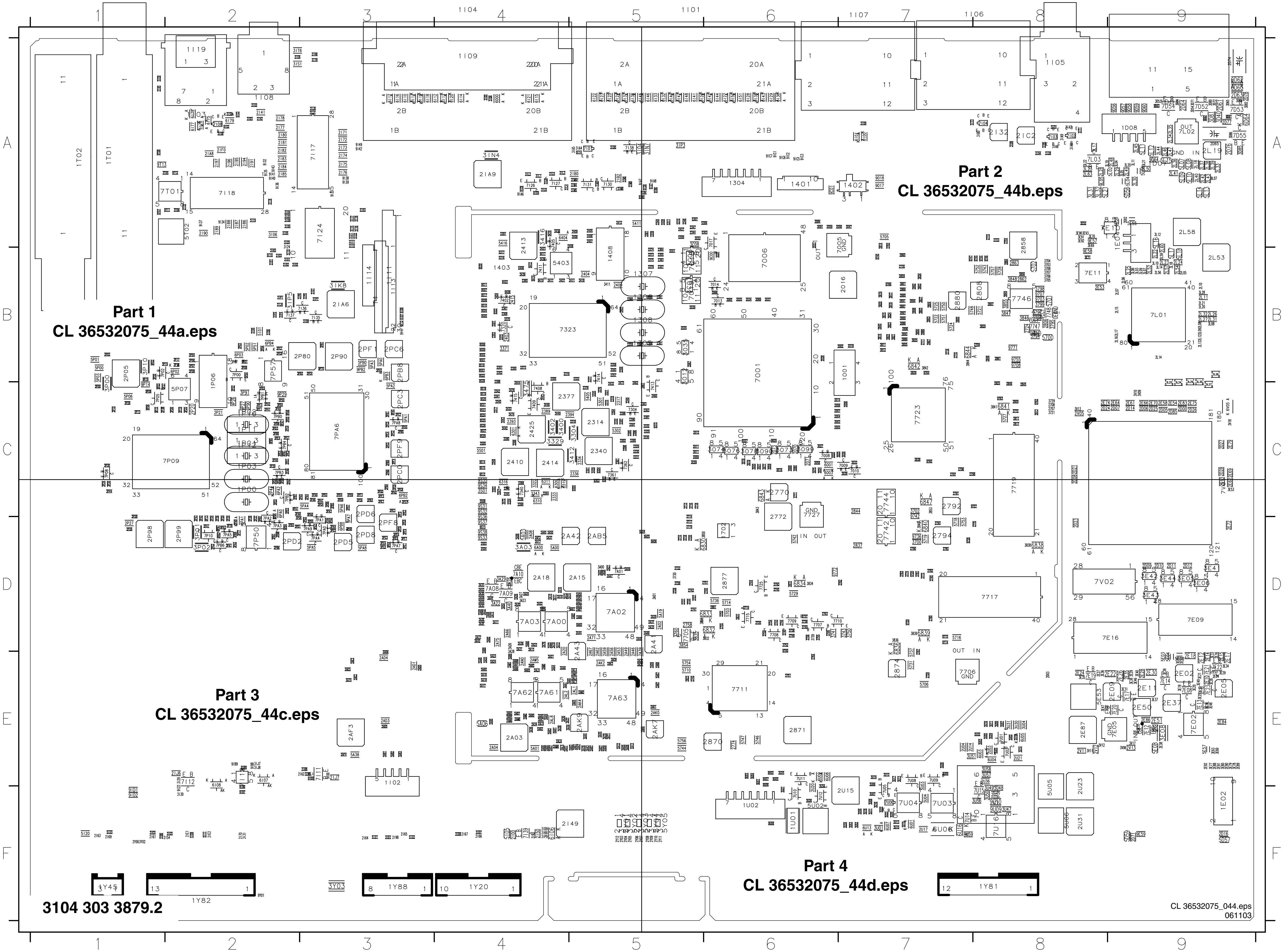
B20
1 2 3 4 5 6 7 8 9
A B C D E
B19f TXLCD0-
B19f TXLCD0+
B19f TXLCD1-
B19f TXLCD1+
B19f TXLCD2-
B19f TXLCD2+
B19f TXCLKLCD-
B19f TXCLKLCD+
B19f TXLCD3-
B19f TXLCD3+
B14e SCL-DISP
B14e SDA-DISP
B14e VS-ON
B14e PDP-GO
B
5Y01 DLW21S
5Y02 DLW21S
5Y03 DLW21S
5Y04 DLW21S
5Y05 DLW21S
2Y12 10p
2Y03 10p
2Y04 10p
2Y05 10p
2Y06 10p
2Y07 10p
2Y08 10p
2Y09 10p
2Y10 10p
2Y11 10p
FY02 FY04 FY07 FY08 FY10 FY12 FY14 FY16 FY17 FY18 FY20 FY21 FY34 FY35
FY36
DF19G-20P-1H(59)
1Y01
22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
1Y81 B12P-PH-K
+5V-DISP FY01
1Y00
FY38
+3V3-DISP FY22
1Y11
B14e AUDIO-R-IO3 FY25 1Y03
B14e GND-AUD
B14e SOUND-ENABLE-IO3 FY05
1Y19
B14e GND-AUD
B14e AUDIO-L-IO3 FY24 1Y04
1Y88 B8P-PH-K
2Y01 1n0 GND-AUD
GND-AUD
1Y45 B3B-PH-K FY19 KEYBOARD-IO3 B1
1Y20 1-440054-0
1Y07 FY26 S-SCL-IO3 B14e
1Y08 FY27 S-SDA-LEDGREEN-IO3 B14e
1Y16 FY28 LED-RED-IO3 B14e
1Y05 FY29 RC-IO3 B14e
1Y06 FY30 LIGHT-SENSOR-IO3 B14e
SCL-SUP
SDA-SUP
FY42
3Y03 1R0 +8V-DISP
FY39
+5V2-DISP
FY32
FY33
9Y00 RES
9Y01 +9V-STBY-SW
9Y02_RES FY31 +5V2-RELAY-IO3 B14e
9Y03 +9V-STBY
1Y17
B1,B19f PWR-OK-PDP 3Y02 100R
100p 2Y00
B14e STANDBY-DISP
1Y12 1Y13 1Y14 1Y15
1Y82 B13P-PH-K
+9V-STBY FY06
+9V-STBY-SW FY03
+8V-DISP FY15
+5V2-DISP FY13
FY41 FY40
FY23 FY37 1Y09
FY09
FY11
1Y10
RES 3Y00 22K
+33V-DISP
3Y01 RES 22K
1Y30 EMC HOLE
1Y18 EMC HOLE
8204 000 8317.2
CL 36532075_040.eps
151003

Layout Small Signal Panel (Top Side Overview)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Part 2
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Part 3
CL 36532075_44c.eps
Part 4
CL 36532075_44d.eps
3104 303 3879.2
CL 36532075_044.eps
061103
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F

Layout Small Signal Panel Mapping (Top Side)

1001 B7
1304 A6
1305 B5
1306 B5
1307 B5
1308 B5
1401 A6
1402 A7
1403 B4
1408 B5
1702 D6
1D01 A9
1D07 E8
1D08 A9
1E02 F9
1E04 A9
1I01 A6
1I02 F3
1I03 A2
1I04 A4
1I05 A8
1I06 A7
1I07 A7
1I08 A2
1I09 A4
1I11 A3
1I13 B3
1I14 B3
1I19 A2
1P00 C2
1P01 C2
1P02 C2
1P03 C2
1P06 B2
1P10 C2
1P11 C2
1P12 C2
1T01 A1
1T02 A1
1U01 F6
1U02 E6
1Y20 F4
1Y45 F1
1Y81 F8
1Y82 F2
1Y88 F3
2002 B7
2004 C6
2005 C6
2006 C6
2007 C6
2008 C7
2009 C5
2011 C5
2012 C5
2014 C6
2016 B7
2018 B7
2020 C6
2025 B6
2027 C6
2028 B6
2029 C6
2031 A6
2034 B6
2035 B5
2037 B6
2039 B5
2058 A7
2059 A6
2067 B5
2070 C6
2071 C6
2073 C6
2301 C5
2305 B4
2314 C5
2315 C5
2316 B4
2317 C5
2318 C5
2322 B5
2324 C4
2327 B5
2329 C5
2330 C5
2331 C5
2332 C5
2333 C4

2334 C5
2336 C5
2339 A5
2340 C5
2344 A5
2347 A5
2348 A5
2349 A5
2350 B4
2351 B4
2352 B4
2353 B4
2355 B5
2356 B5
2357 B5
2358 B5
2359 B5
2360 B5
2361 B5
2362 B5
2363 C5
2364 B5
2365 B4
2367 B4
2368 B4
2373 B4
2376 C5
2377 C4
2379 B5
2380 B5
2381 B5
2382 B5
2383 B5
2388 B4
2389 C4
2391 A4
2393 C4
2394 C5
2395 C5
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2397 C5
2398 C5
2401 B5
2403 B4
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2406 A5
2407 A5
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2409 B5
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2414 C4
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2417 B4
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2428 A5
2429 C5
2432 C5
2433 C4
2707 C8
2708 C8
2709 B8
2710 B7
2711 B7
2715 A8
2716 B7
2718 C5
2719 D5
2720 D5
2721 D5
2722 D5
2723 A8
2724 B8
2729 E7
2735 B7
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2741 D5
2742 D5
2743 D6
2744 D6
2745 E5
2751 D6
2752 D6
2754 A8
2755 D6

2758 D5
2763 D6
2764 E6
2767 E7
2770 C6
2771 C6
2772 D6
2774 E6
2776 D8
2780 D7
2782 D7
2783 A7
2790 D7
2791 C7
2792 D7
2793 D7
2794 D7
2796 C7
2797 C7
2798 C7
2803 B7
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2805 B7
2806 B8
2807 B8
2808 B7
2809 C8
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2AB7 D5
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2AD6 E3
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2AD9 E5
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2AK9 E4
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2AL2 E4
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2AL4 E5

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2I45 A1
2I49 F5
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2I55 B2
2I56 B2
2I61 F1
2I62 E3
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9P08 C1
9P13 D2
9P14 C1
9P15 C1
9P19 B1
9P26 C2
9P27 C2
9P29 C2
9P70 B3
9PA0 D3
9PA1 C2
9PA2 D3
9PA3 D2
9PA4 D3
9PA5 C3
9PA6 C3
9PA7 C2
9PA8 C2
9PB1 C2
9PB2 B3
9PB3 D2
9PB4 D2
9PB5 C2
9S01 B4
9S02 B4
9S03 B4
9S04 B4
9S05 B4
9S06 B4
9S07 B4
9S08 B4
9S09 B4
9S10 B4
9S11 B4
9S12 C4
9S13 D4
9S14 C4
9S15 C4
9S16 B4
9S17 B4
9S18 C4
9S19 C4
9S20 C4
9S21 C4
9S22 B4
9S23 C4
9S24 C4
9S25 C4
9S26 C4
9S27 C4
9S28 B4
9S29 C4
9S30 B4
9S31 C4
9S32 C4
9S33 D4
9S34 C4
9S35 C4
9S36 D4
9S37 D4
9S38 D4
9T07 A1
9T08 A1
9T11 A2
9T12 A2
9T13 A1
9U01 E6
9U02 E6
9U03 E6
9U04 E6
9U05 E6
9U06 E6
9U07 E6
9U08 F6
9U09 F8
9U10 F8
9Y01 F2

CL 36532075_44m.eps
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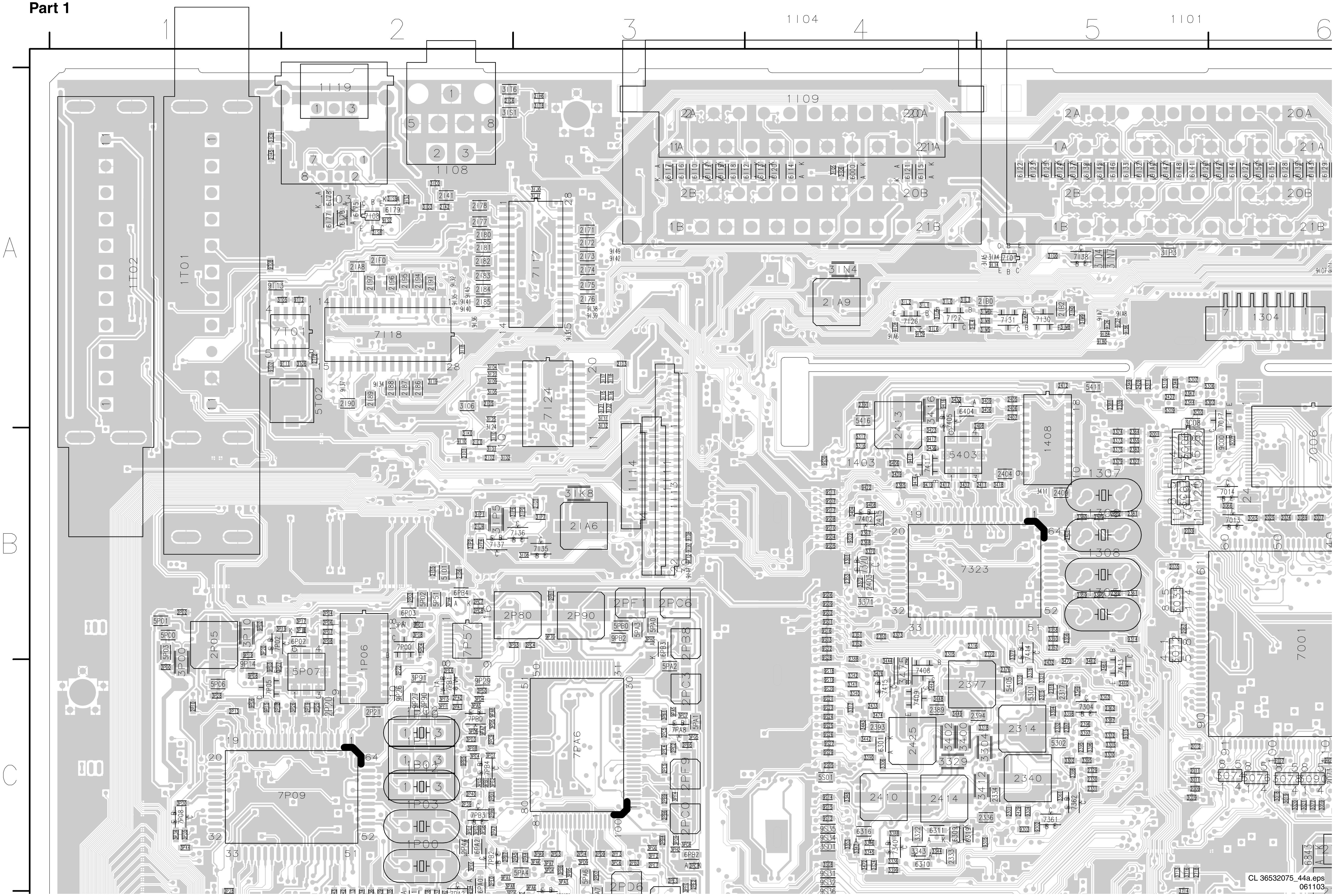
Layout Small Signal Panel (Top Side Part 1)

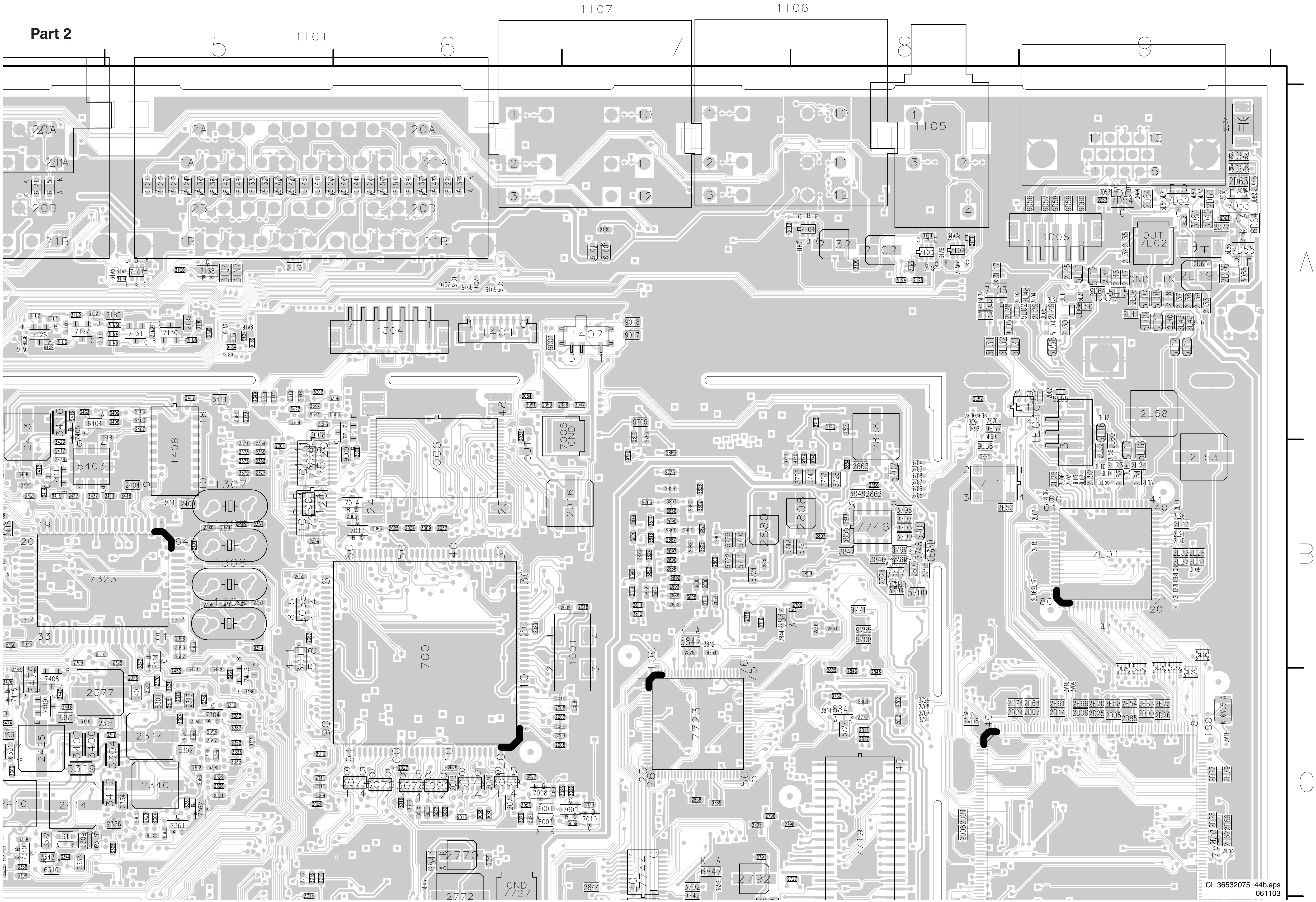
Part 1


1
2
3
4
5
6
A
B
C
1104
1101
1119
1108
1109
1T02
1T01
7T01
5T02
7118
7117
7124
1114
1113
21A9
31N4
21A6
31K8
1304
2413
5403
1408
1403
1307
1308
7323
7006
7001
2P05
5P07
1P06
2P80
2P90
2PF1
2PC6
7P57
7PA6
7P09
1B02
1P03
1P00
2377
2314
2425
2340
2410
2414
3329
2PD6

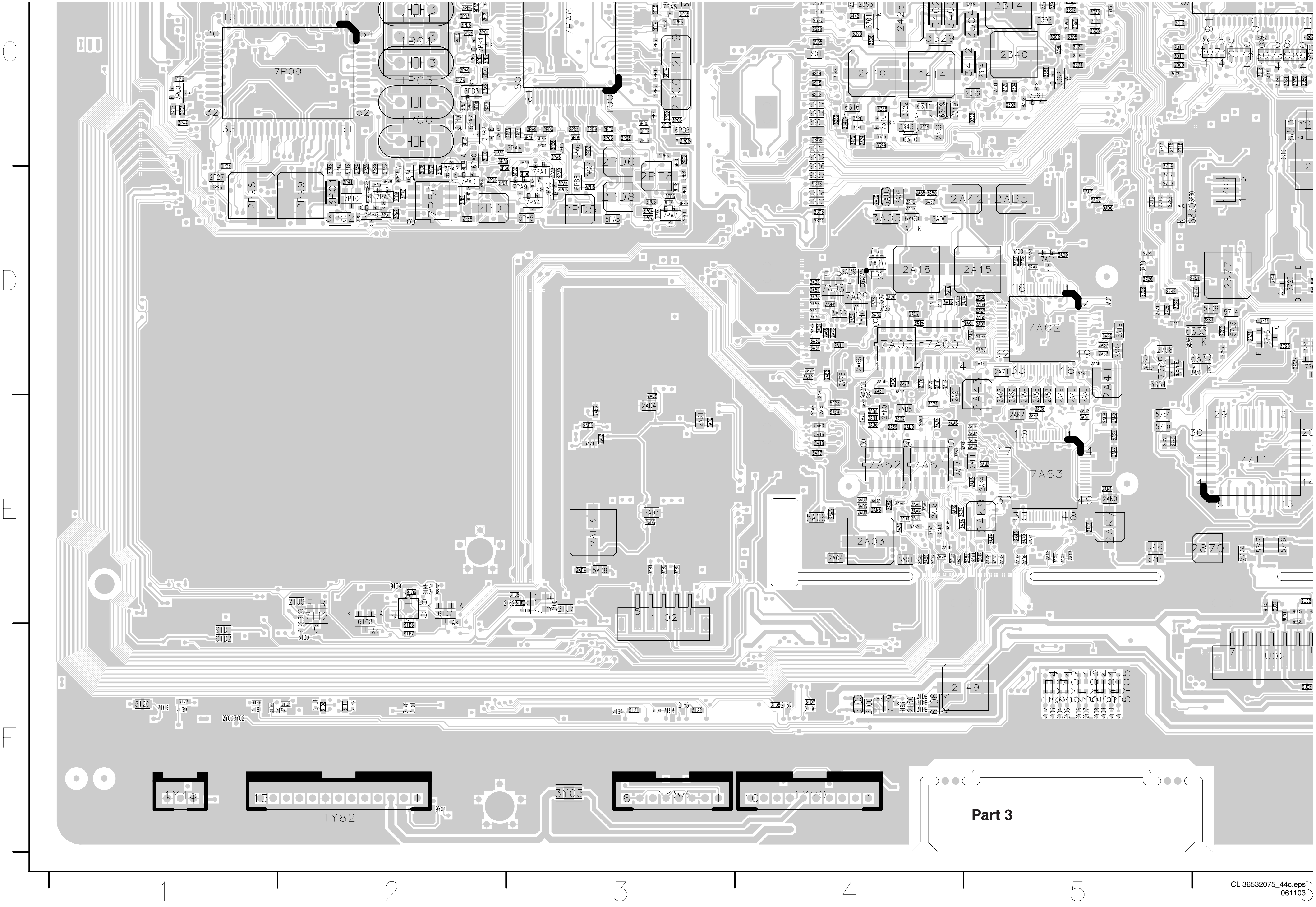
CL 36532075_44a.eps
061103

Layout Small Signal Panel (Top Side Part 2)

Part 2

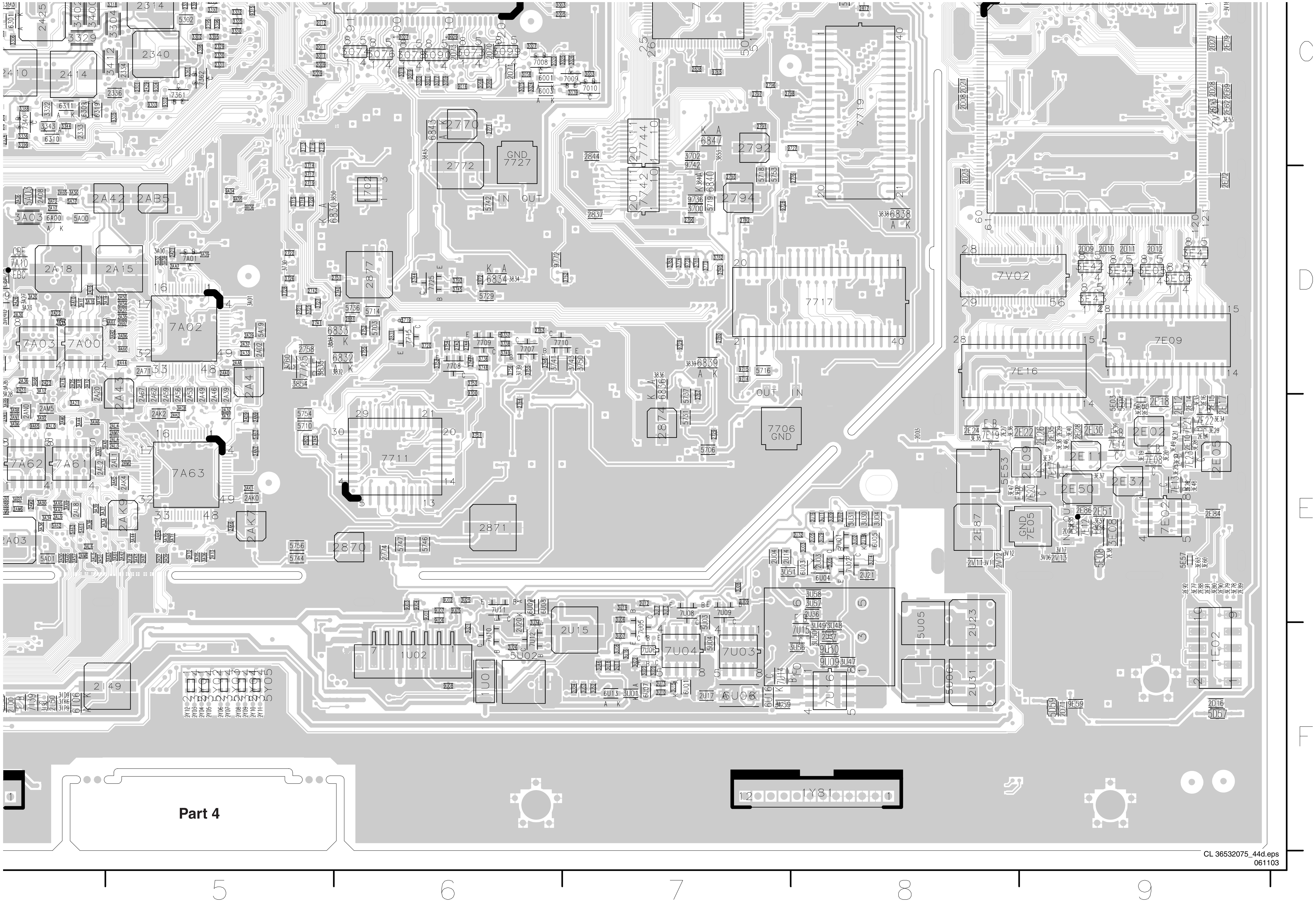

5
6
7
8
9
A
B
C
1101
1107
1106
1105
1304
1401
1402
1408
1307
1308
7001
7006
7323
7723
7719
7L01
7746
7005
7727
2L58
2L53
5403
2377
2314
2340
1D08
7L02
CL 36532075_44b.eps
061103

Layout Small Signal Panel (Top Side Part 3)


C
D
E
F
1
2
3
4
5
7P09
1P00
1P03
1B02
2P98
2P99
2PD2
2PD5
2PD6
2PD8
2PF8
2PF9
2PC0
7P50
7PA6
2410
2414
2340
2314
3329
2A42
2AB5
2A18
2A15
3A03
7A02
7A03
7A00
7A62
7A61
7A63
2A03
2A43
2A4
2AK9
2AK7
2877
2870
7711
1702
1U02
2149
1102
2AF3
1Y45
1Y82
3Y03
1Y88
1Y20
Part 3

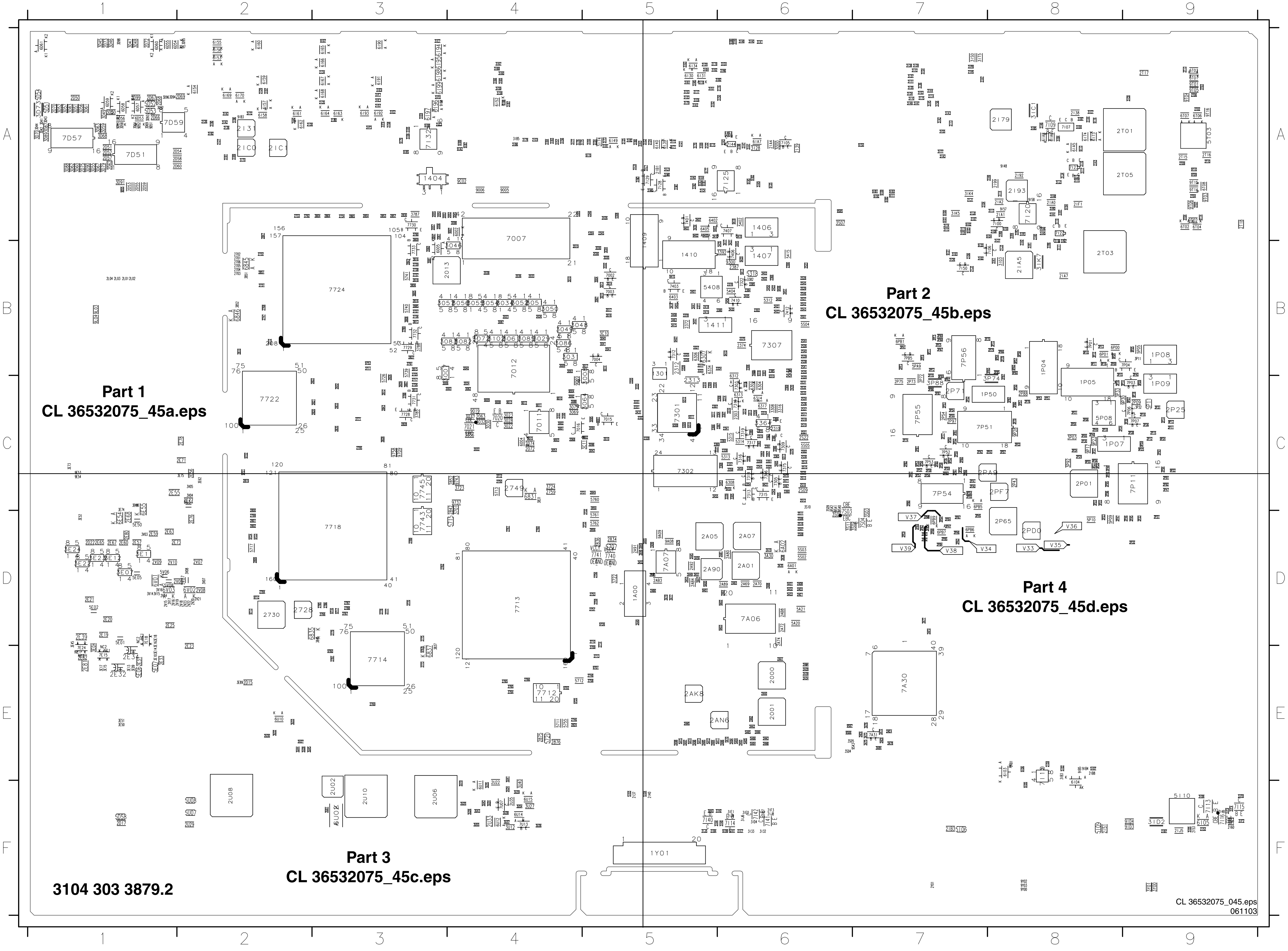
CL 36532075_44c.eps
061103

Layout Small Signal Panel (Top Side Part 4)


C
D
E
F
5
6
7
8
9
Part 4
1Y81
7A02
7A03
7A00
7A63
7A62
7A61
7711
7717
7719
7V02
7E16
7E09
7E02
7E05
7706 GND
7727 GND
2871
2870
2877
2772
2770
2792
2794
2A18
2A15
2A42
2AB5
2314
2340
2410
2414
2149
1U02
1U01
2U15
7U04
7U03
5U05
2U23
5U06
2U31
1E02
2E87
2E50
2E37
2E11
2E02
2E05
5E53
2E09
2874

CL 36532075_44d.eps
061103

Layout Small Signal Panel (Bottom Side Overview)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Part 1
CL 36532075_45a.eps
Part 2
CL 36532075_45b.eps
Part 3
CL 36532075_45c.eps
Part 4
CL 36532075_45d.eps
3104 303 3879.2
7724
7722
7718
7714
7713
7012
7007
7302
7301
7307
7A30
7A06
1Y01
2T01
2T05
2T03
1P05
7P51
7P54
7P55
7P56
1404
1406
1407
1409
1410
1411
2U08
2U10
2U06
7D57
7D51
7D59

CL 36532075_045.eps
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Layout Small Signal Panel Mapping (Bottom Side)

1301	B5
1305	B5
1306	B5
1307	B5
1308	B5
1404	A3
1406	A6
1407	B6
1409	B5
1410	B5
1411	B5
1A00	D5
1D01	A1
1D07	A2
1I01	A5
1I03	A8
1I04	A6
1I05	A2
1I06	A2
1I07	A3
1I08	A8
1I09	A6
1I19	A8
1P00	C8
1P01	C8
1P02	C8
1P03	C8
1P04	B8
1P05	C8
1P07	C8
1P08	B9
1P09	C9
1P10	C8
1P11	C8
1P12	C8
1P50	C8
1T01	A9
1T02	A9
1Y01	F5
1Y20	F6
1Y45	F9
1Y81	F2
1Y82	F8
1Y88	F7
2000	E6
2001	E6
2003	C4
2010	C5
2013	B3
2017	B5
2019	B4
2022	C4
2023	B4
2024	C4
2026	B4
2033	B4
2036	B4
2038	B4
2040	B4
2041	B5
2052	A4
2053	A3
2054	A3
2055	A3
2056	A3
2057	A3
2060	B3
2061	A3
2063	C4
2068	C4
2072	C4
2074	C4
2302	B6
2303	C6
2304	C6
2306	B6
2307	C5
2308	C6
2309	C5
2310	C5
2311	B5
2312	B5
2313	C5
2319	C6
2320	C5
2321	C5
2323	C5
2325	B5
2326	C6
2328	C5
2335	C6
2337	C6
2338	C6
2341	C6
2342	C6
2343	C6
2345	A5
2346	A5
2354	B6
2366	B6
2369	C6
2370	C6
2371	B5
2372	B5
2374	B6
2375	B6
2378	B6
2384	B6
2385	B6
2386	C6
2387	B6
2390	B6
2402	B6
2418	B5
2419	B5
2420	C6
2421	B6
2422	B6
2423	B6
2424	C6
2426	A5
2431	C5
2701	B2
2702	B2
2703	B2
2704	B2
2705	B2
2706	B2
2712	B2
2713	E5
2714	D5
2717	C3
2725	B3
2726	C3
2727	B3
2728	D2
2730	D2
2731	B2
2732	B2
2733	A2
2734	A3
2736	B3
2737	B3
2738	B3
2739	B3
2746	E4
2747	B2
2748	E5
2749	C4
2750	C4
2753	D5
2756	D5
2757	D5
2759	C4
2760	D4
2761	D4
2762	D3
2765	E4
2766	E4
2768	B2
2769	E3
2773	E3
2775	D3
2777	D3
2778	D3
2779	D3
2781	E3
2784	D2
2785	D3
2786	D3
2787	D3
2788	D3
2789	D3
2795	C3
2799	D2
2800	C2
2801	D2
2802	D2
2810	B2
2812	C3
2815	B3
2816	B3
2818	B3
2819	C2
2820	C3
2821	C3
2822	C3
2824	E4
2826	C3
2827	B3
2828	C3
2830	A3
2832	C3
2833	C3
2834	D5
2835	C3
2836	D5
2839	C3
2841	B3
2842	C4
2843	C3
2847	A2
2849	C5
2850	C5
2851	B2
2852	C4
2853	A3
2854	A3
2856	D5
2857	A3
2864	A3
2865	A3
2875	E4
2876	E4
2885	B3
2899	D2
2A01	D6
2A05	D5
2A07	D6
2A19	D6
2A28	E6
2A34	E6
2A38	E6
2A64	D6
2A69	D6
2A70	D6
2A72	D6
2A74	D6
2A79	D5
2A80	D6
2A81	D6
2A83	D6
2A84	E5
2A85	E5
2A86	E6
2A88	D6
2A89	D6
2A90	D5
2A91	D5
2A92	D5
2A93	E6
2A94	E6
2A96	E5
2A97	E5
2A98	E5
2A99	D5
2AA0	E6
2AA1	E6
2AA5	D5
2AA9	D5
2AB0	D5
2AB3	D5
2AB4	D5
2AB8	D6
2AD8	D6
2AE0	D6
2AE1	D6
2AE4	E7
2AE6	E7
2AE8	E7
2AF0	D7
2AK8	E5
2AM4	E6
2AN2	E6
2AN3	E6
2AN4	E6
2AN5	E5
2AN6	E6
2AN8	E6
2C00	B5
2C02	B5
2D15	E2
2D17	F1
2D22	D1
2D50	A1
2D51	A1
2D52	A1
2D53	A1
2D54	A2
2D55	A1
2D57	A1
2D58	A2
2D59	A1
2D60	A2
2D62	A1
2D66	A1
2D67	A1
2D68	A1
2D69	A2
2D70	A1
2D72	A1
2D73	A1
2D75	A1
2E19	D1
2E20	D1
2E21	D1
2E23	E2
2E25	D1
2E31	E1
2E32	E1
2E33	E1
2E34	D1
2E39	D1
2E55	C1
2E56	C2
2E57	D1
2E59	D1
2E60	D1
2E63	D1
2E65	D1
2E67	D1
2E68	D1
2E71	C2
2E73	D1
2E76	D2
2E77	C2
2E78	C2
2E80	D1
2E81	E1
2E82	E1
2I04	A7
2I06	B7
2I07	A7
2I08	A8
2I10	A7
2I11	A7
2I12	A7
2I13	A7
2I14	A7
2I15	A7
2I16	A6
2I17	A5
2I18	A5
2I19	A5
2I20	A5
2I21	A5
2I22	A5
2I23	A5
2I24	A5
2I25	A5
2I26	A2
2I27	A2
2I29	A2
2I30	A2
2I31	A2
2I33	A3
2I34	A3
2I35	A3
2I36	A2
2I37	F5
2I38	A8
2I39	A6
2I40	F5
2I43	A8
2I44	A8
2I46	A8
2I47	A6
2I48	F9
2I51	F8
2I52	F9
2I53	F9
2I57	A3
2I58	A3
2I59	E8
2I60	F9
2I79	A8
2I92	A8
2I93	A8
2I99	A8
2IA0	A8
2IA1	A8
2IA2	A8
2IA3	A7
2IA4	A6
2IA5	B8
2IA7	B8
2IB1	A5
2IB3	F7
2IB4	F5
2IB7	F9
2IB8	E8
2IC0	A2
2IC1	A2
2IC3	A3
2IC4	A5
2IC7	F6
2IC9	A4
2IF1	A8
2IF3	F6
2IH0	A8
2IH1	A8
2IH2	B8
2IH3	A6
2IH5	A7
2IH7	A7
2IJ0	A7
2IJ1	A7
2IJ2	B7
2IJ3	B8
2IJ5	F9
2IJ8	F6
2IJ9	F6
2L01	B1
2L02	B1
2L03	B1
2L04	B1
2P01	C8
2P09	C9
2P11	C9
2P12	C9
2P14	C9
2P15	C9
2P16	C9
2P18	C8
2P23	D8
2P24	C8
2P25	C9
2P29	C8
2P30	C8
2P31	D9
2P32	D9
2P33	D9
2P43	C8
2P45	D9
2P46	D9
2P47	D8
2P49	C8
2P51	C8
2P52	C7
2P53	C7
2P54	C7
2P55	C7
2P56	C7
2P57	C7
2P58	C7
2P59	C7
2P60	C7
2P61	C7
2P62	C7
2P63	D7
2P64	D7
2P65	C8
2P66	C7
2P67	D7
2P68	D7
2P69	D7
2P70	B7
2P71	C7
2P72	C7
2P73	C7
2P74	C7
2P75	C7
2P76	C8
2P77	C7
2P78	B8
2P79	B8
2P82	D7
2P83	D7
2P84	D7
2P85	D7
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2P88	C8
2P91	C9
2P92	C9
2P93	C9
2P94	C9
2P95	C8
2P96	C8
2P97	C7
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2PA1	C7
2PA2	C7
2PA3	C8
2PA9	C8
2PB0	C7
2PB1	C7
2PB2	C7
2PD0	D8
2PE9	D7
2PF2	B7
2PF5	B7
2PF6	B7
2PF7	C8
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2S02	C6
2S06	D6
2S07	D6
2S08	D6
2S09	C6
2S10	C6
2S11	D6
2S12	C6
2S13	C6
2S14	C6
2S15	C6
2S16	D6
2S17	C6
2S18	C6
2S19	C6
2S20	C6
2S21	C6
2S22	C6
2S23	B6
2S25	C6
2S26	B6
2S27	B6
2S28	B6
2S29	B6
2S30	C6
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2S32	C6
2S33	C6
2S34	C6
2S35	B6
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2S37	C6
2S38	B6
2S39	B6
2S40	B6
2S41	B6
2S42	B6
2S43	B6
2S44	B6
2S45	B6
2S46	B6
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2T03	B8
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2T05	A9
2T06	A9
2T07	A9
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2T10	A9
2T13	A9
2T14	A9
2T15	A9
2T16	A9
2T17	A9
2T18	A9
2U01	F3
2U02	E3
2U06	F3
2U08	F2
2U10	E3
2U19	F4
2U22	F4
2U24	F4
2U25	F4
2U26	F4
2U27	E2
2U28	E2
2U29	F2
2U30	E2
2U33	F4
2U35	F4
2V06	D2
2V07	D2
2V08	D2
2V09	D1
2V10	D1
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2V15	D1
2V16	D1
2V17	D1
2V18	D2
2V19	D2
2V20	D2
2V21	D2
2V22	D2
2V23	D2
2Y01	F7
3000	A6
3001	C4
3002	C4
3004	B5
3005	B4
3006	C3
3007	B3
3008	B5
3010	B4
3013	B5
3014	B5
3015	B5
3016	B5
3017	B5
3022	C4
3023	C4
3028	C4
3029	B4
3030	C4
3031	B4
3032	C4
3034	B4
3036	C4
3037	C4
3040	B5
3041	B5
3042	C5
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3049	B4
3050	B4
3051	B4
3052	B4
3053	C4
3054	B4
3055	B4
3056	B4
3057	B3
3061	B4
3062	C4
3064	C5
3067	B5
3069	C4
3072	B4
3079	C4
3081	B3
3082	B4
3083	B4
3085	B4
3086	B4
3087	B4
3088	C4
3092	C4
3093	B4
3094	C5
3095	C5
3096	C5
3097	A3
3098	A4
3100	C4
3101	C4
3102	B4
3303	B6
3305	C6
3307	C6
3308	C6
3310	C6
3311	C5
3312	C6
3313	C6
3314	C6
3315	C6
3316	C6
3319	C6
3323	B5
3324	B6
3325	C6
3326	B5
3327	B5
3328	B5
3331	C5
3333	C5
3334	C5
3337	C5
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3339	C6
3350	C6
3351	C6
3352	C6
3354	C6
3355	C6
3356	C6
3357	C6
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3359	C6
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3365	C6
3366	C5
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3369	C5
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3382	B6
3383	C6
3384	C6
3385	B6
3386	C6
3389	C6
3391	C6
3392	B6
3401	B5
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3408	B5
3410	A5
3414	B5
3415	B5
3417	B6
3419	A6
3420	B6
3421	B6
3434	A5
3435	B6
3441	B5
3445	B6
3450	B6
3451	B6
3452	B6
3453	C6
3454	C6
3455	C5
3456	B6
3457	B5
3459	C6
3463	B5
3465	C6
3467	C6
3468	B6
3470	C6
3471	C6
3701	C4
3709	E5
3710	D5
3711	B3
3712	C4
3722	D5
3723	C4
3724	C4
3731	C5
3732	D5
3733	D5
3758	E5
3759	D5
3764	E4
3765	E4
3766	D3
3767	D3
3770	D3
3771	C3
3785	C3
3786	B3
3787	A3
3788	C3
3789	B3
3790	A3
3791	B3
3792	A2
3804	A3
3805	B3
3806	B3
3807	C3
3808	B3
3809	A3
3810	C3
3813	B3
3816	B3
3828	C3
3831	C4
3837	E3
3845	D3
3851	B2
3852	B2
3A17	D5
3A19	D5
3A30	D6
3A35	D6
3A38	D6
3A45	D5
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3A47	D5
3A48	D5
3A49	D5
3A51	D5
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3A53	D5
3A55	D5
3A56	D5
3A72	E7
3A73	E7
3A75	E7
3A76	E7
3A77	D7
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3A84	E7
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3C05	B5
3C10	B5
3C11	C5
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3D46	A1
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3E10	E1
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3E15	E1
3E16	D1
3E17	E1
3E18	D1
3E22	D1
3E23	D1
3E24	D1
3E45	D1
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3E51	E1
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3IA2	A2
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3IH2	F6
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3IH7	B8
3IH8	A8
3IH9	A8
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3II1	B8
3II2	B8
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3II4	A8
3II5	A8
3II6	A8
3II7	A8
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3IJ3	A8
3IJ4	A8
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3IJ6	F6
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3IK3	A5
3IK4	A7
3IK5	A7
3IK7	B8
3IK9	A6
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3IL8	A5
3IL9	A5
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3IM2	A5
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3IR6	B8
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3IS4	A7
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3IS6	A7
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3IT5	A7
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3P06	C8
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3P12	B8
3P13	B8
3P14	C9
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3P24	C8
3P31	C9
3P32	C9
3P33	C8
3P36	C9
3P37	C8
3P38	C9
3P39	C9
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3P47	C9
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3P59	C7
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3P70	B7
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3P82	C8
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3P87	C7
3P88	C7
3P92	C8
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3PH7	D7
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3S03	D7
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3S06	D6
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3S09	C6
3S10	C6
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3U33	E2
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3U36	F4
3U37	F4
3U38	F4
3U39	F4
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3U41	E4
3U42	F4
3U43	F4
3U44	E2
3U45	E2
3U54	F4
3U55	F4
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3V04	C2
3V05	C2
3V07	D2
3V08	D2
3V14	D1
3V15	D1
3V16	D1
3Y00	F9
3Y01	F9
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5305	A4
5308	A5
5312	B6
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5314	C6
5315	C6
5318	B6
5401	B5
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5404	B6
5408	B5
5415	B6
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5712	E4
5713	C4
5715	D4
5717	D2
5720	E4
5726	C3
5739	B3
5740	B3
5741	B3
5755	E4
5760	C5
5761	D5
5762	D5
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5A05	E6
5A10	E6
5A11	E6
5A12	E5
5A13	E5
5A14	E5
5A15	E5
5A20	D6
5A21	D6
5A31	D6
5A32	D6
5A33	D6
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5A65	E6
5A66	E6
5D51	A1
5D52	A1
5D53	A1
5D54	A1
5D58	F1
5E01	D1
5E02	D1
5E05	D1
5E06	E1
5E07	E1
5E50	D1
5E51	C2
5I02	E8
5I03	F5
5I04	F5
5I06	F7
5I07	E8
5I09	F8
5I10	F9
5P05	B9
5P08	C8
5P09	D8
5P10	D8
5P11	C9
5P50	C7
5PA9	B7
5S02	D6
5S03	D6
5S04	B6
5S05	C6
5T03	A9
5U01	F2
5U07	F2
5U08	F2
5V06	D1
5V07	D2
5V08	D1
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6303	B6
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6306	B5
6307	B5
6308	C6
6312	B6
6313	C6
6314	C6
6317	C6
6334	B6
6402	A5
6403	B5
6405	A5
6831	C4
6835	D2
6837	E3
6845	B2
6846	B2
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6A02	D6
6D53	A1
6D54	A2
6D55	A1
6D56	A1
6D57	A1
6D58	A1
6D59	A1
6D60	A1
6D61	A1
6E54	D1
6E55	C1
6I03	E8
6I04	E8
6I05	F9
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6V03	D1
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7012	C4
7015	C5
7016	C5
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7303	C6
7305	C6
7306	C6
7307	B6
7309	C6
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7314	C6
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7316	C6
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7318	C6
7319	C6
7322	B6
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7401	A5
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7407	A6
7410	B6
7412	B6
7712	E4
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7714	D3
7718	C2
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7724	A3
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7730	A3
7731	C3
7732	B3
7733	B3
7740	D5
7741	D5
7743	D3
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7A06	D5
7A07	D5
7A30	E7
7A31	E7
7D51	A1
7D57	A1
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7E15	D1
7E18	D1
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7I07	A8
7I09	A8
7I10	E8
7I13	F9
7I14	F6
7I15	F9
7I16	F9
7I20	A8
7I22	A8
7I23	A8
7I25	A6
7I28	A5
7I29	A5
7I32	A3
7I40	F5
7I41	F6
7I42	F6
7I44	A6
7I50	B7
7P01	B8
7P03	C9
7P04	B9
7P06	C9
7P07	C9
7P11	C9
7P51	C7
7P52	C7
7P53	C7
7P54	D7
7P55	C7
7P56	B7
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7S04	D7
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7U13	F4
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9002	C5
9003	C4
9004	C4
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9006	A4
9007	A4
9008	C4
9009	C4
9010	C4
9011	C4
9012	C4
9013	C4
9014	B5
9015	C4
9019	C4
9020	C4
9300	B6
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9309	C5
9310	C5
9311	C5
9312	C5
9313	C6
9318	B6
9319	C6
9401	A5
9402	A5
9403	A5
9405	A5
9406	B6
9407	B5
9410	B6
9413	B6
9415	B5
9418	A6
9420	B6
9421	C6
9701	E5
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9709	C3
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9713	D2
9716	D3
9717	D3
9721	C2
9722	C2
9723	D2
9724	D2
9725	E4
9726	D5
9737	C4
9743	C4
9753	B3
9758	C3
9760	E3
9761	E3
9A00	D5
9A01	D5
9A02	D6
9A03	D6
9A08	D5
9A09	D5
9C02	A4
9D51	A1
9D52	A1
9D53	A1
9D55	A1
9E53	C1
9E54	C1
9I00	A7
9I01	A7
9I02	A7
9I03	A7
9I04	A8
9I05	F8
9I06	E8
9I07	A3
9I09	A7
9I11	A7
9I13	A8
9I15	A5
9I16	A8
9I19	A5
9I20	B7
9I21	B7
9I25	A6
9I48	A8
9I57	A8
9I58	A8
9I59	A8
9I77	A5
9I79	A3
9I81	A5
9I82	A6
9I85	A3
9I87	A4
9I88	A3
9I89	A4
9I92	A7
9I93	A7
9I94	A8
9I99	F6
9IA2	A4
9IA3	A5
9IA4	A5
9IA5	A6
9IB0	A6
9IB1	A7
9IB2	A7
9IB3	A2
9IB4	E8
9IB5	E8
9IC4	A3
9ID3	F9
9ID4	F9
9IS0	A7
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9L04	B1
9P04	B8
9P05	B9
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9P09	C9
9P10	B8
9P11	B8
9P12	C9
9P16	B8
9P17	C8
9P18	C9
9P20	C8
9P21	C8
9P22	C9
9P23	C8
9P24	C9
9P25	C9
9P28	C8
9P30	C9
9P52	C7
9P53	C7
9P54	C7
9P55	C8
9P56	C8
9P57	B8
9P58	B8
9P59	C9
9P60	B8
9P63	C7
9P64	B8
9P65	B8
9P69	C7
9P71	B7
9S40	C6
9S41	C6
9S42	C6
9S43	E7
9S65	A6
9S66	E6
9S67	E6
9T01	A9
9T02	A9
9T03	A9
9T04	A9
9T05	A9
9T06	A9
9T09	A9
9T10	A9
9T14	A9
9T15	A9
9T16	A9
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9Y02	F8
9Y03	F8

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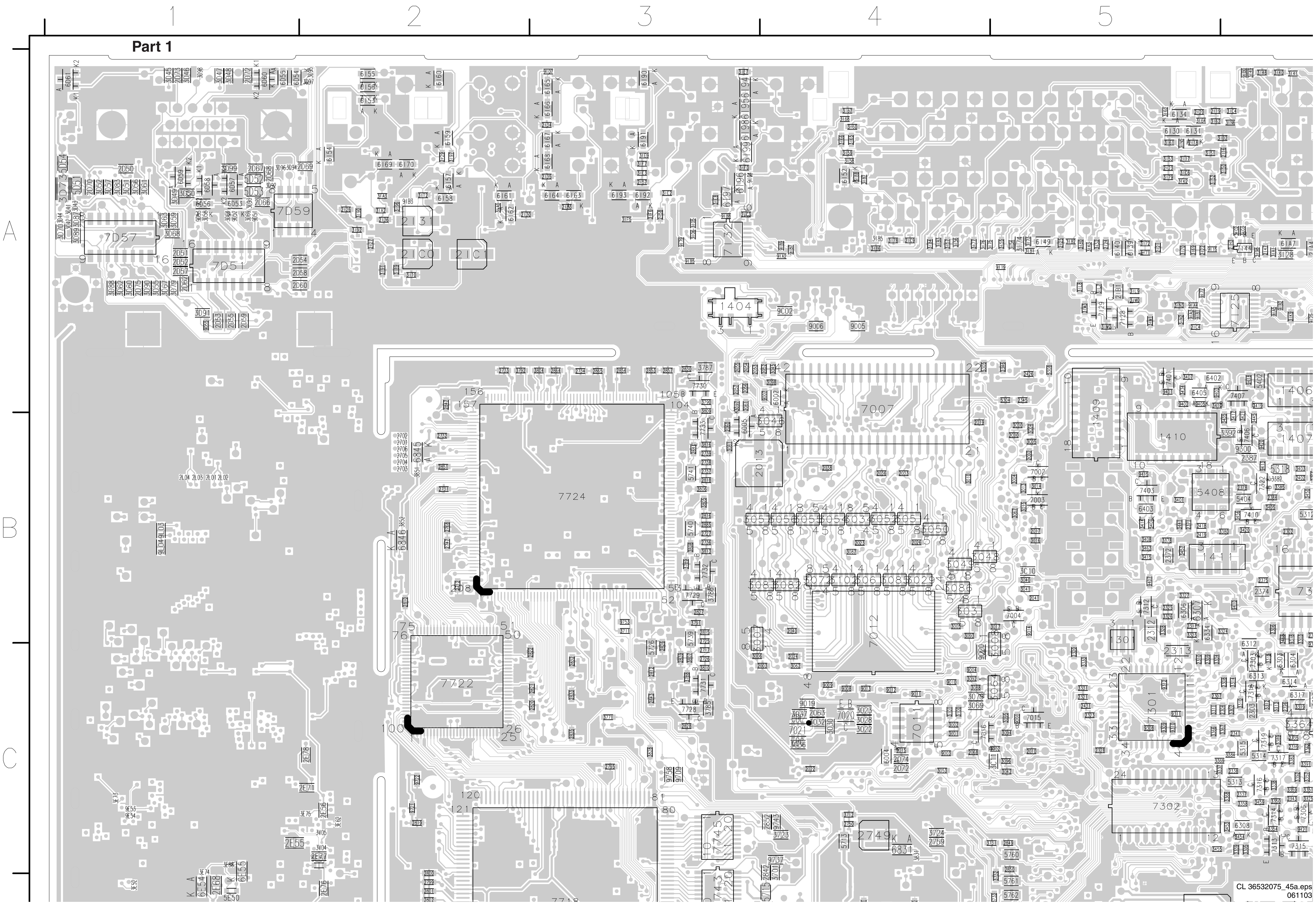
Layout Small Signal Panel (Bottom Side Part 1)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B
C
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21C1
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7007
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7722
7012
7011
1409
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CL 36532075_45a.eps
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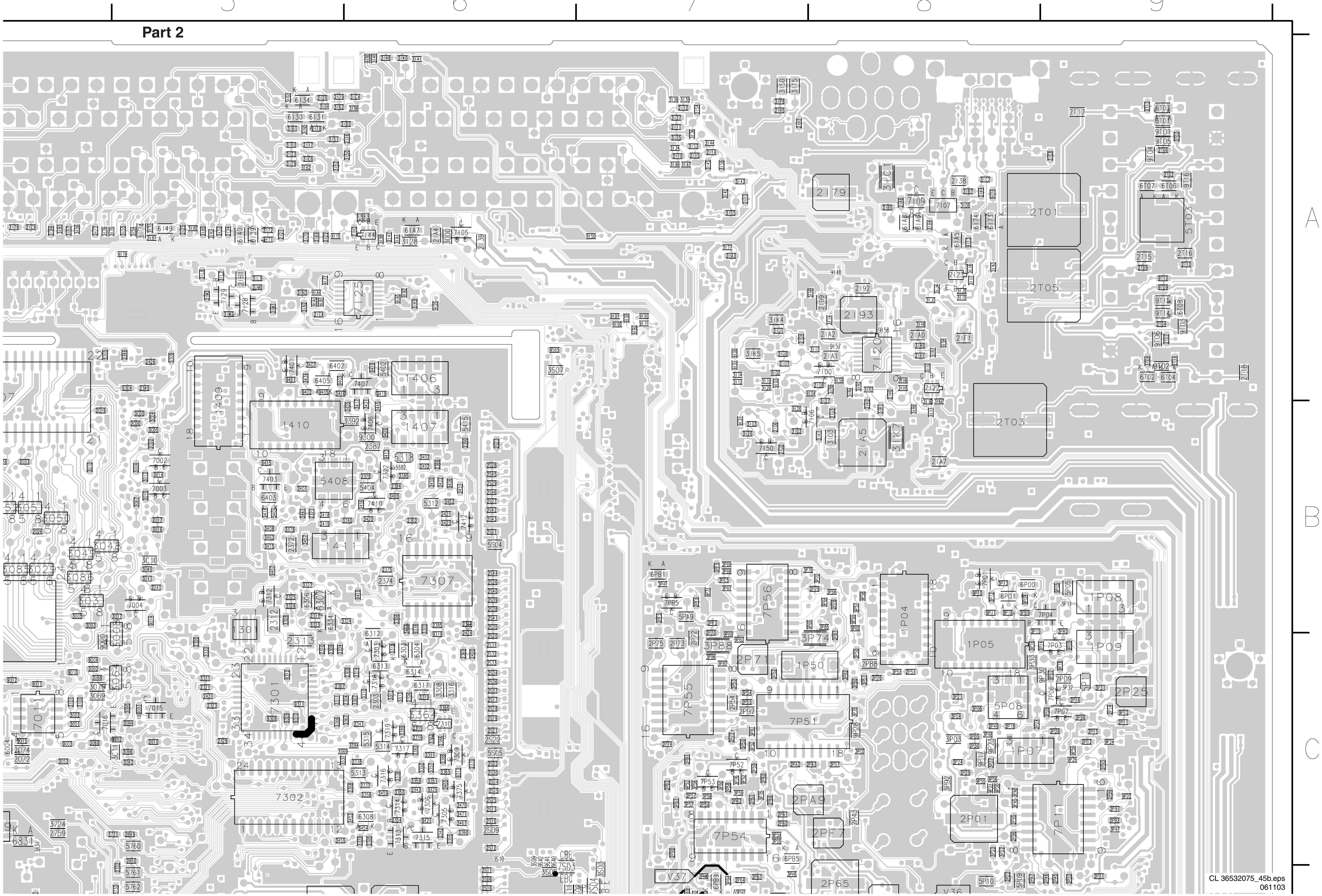
Layout Small Signal Panel (Bottom Side Part 2)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7
8
9
A
B
C
Part 2
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2313
7301
7302
7011
7P56
7P04
1P05
1P08
1P09
7P55
7P51
1P50
2P71
3P74
3P88
5P08
1P07
2P25
2P01
7P11
2PA9
2PF7
7P54
2P65
V37
V36
2179
2T01
2T05
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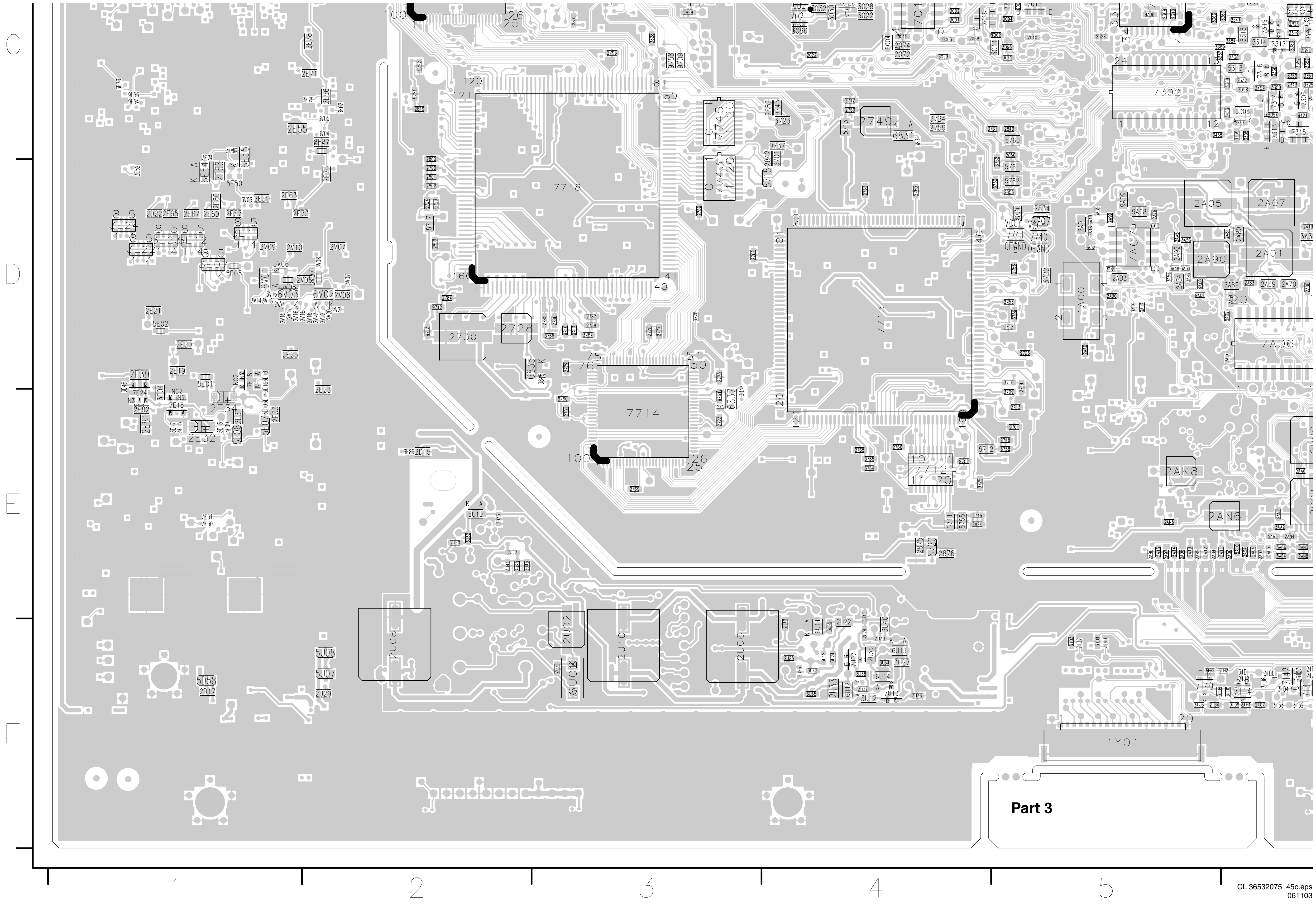
Layout Small Signal Panel (Bottom Side Part 3)


C
D
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2
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2A07
2A90
2A01
7A06
2AK8
2AN6
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2U06
1Y01
1A00
Part 3

CL 36532075_45c.eps
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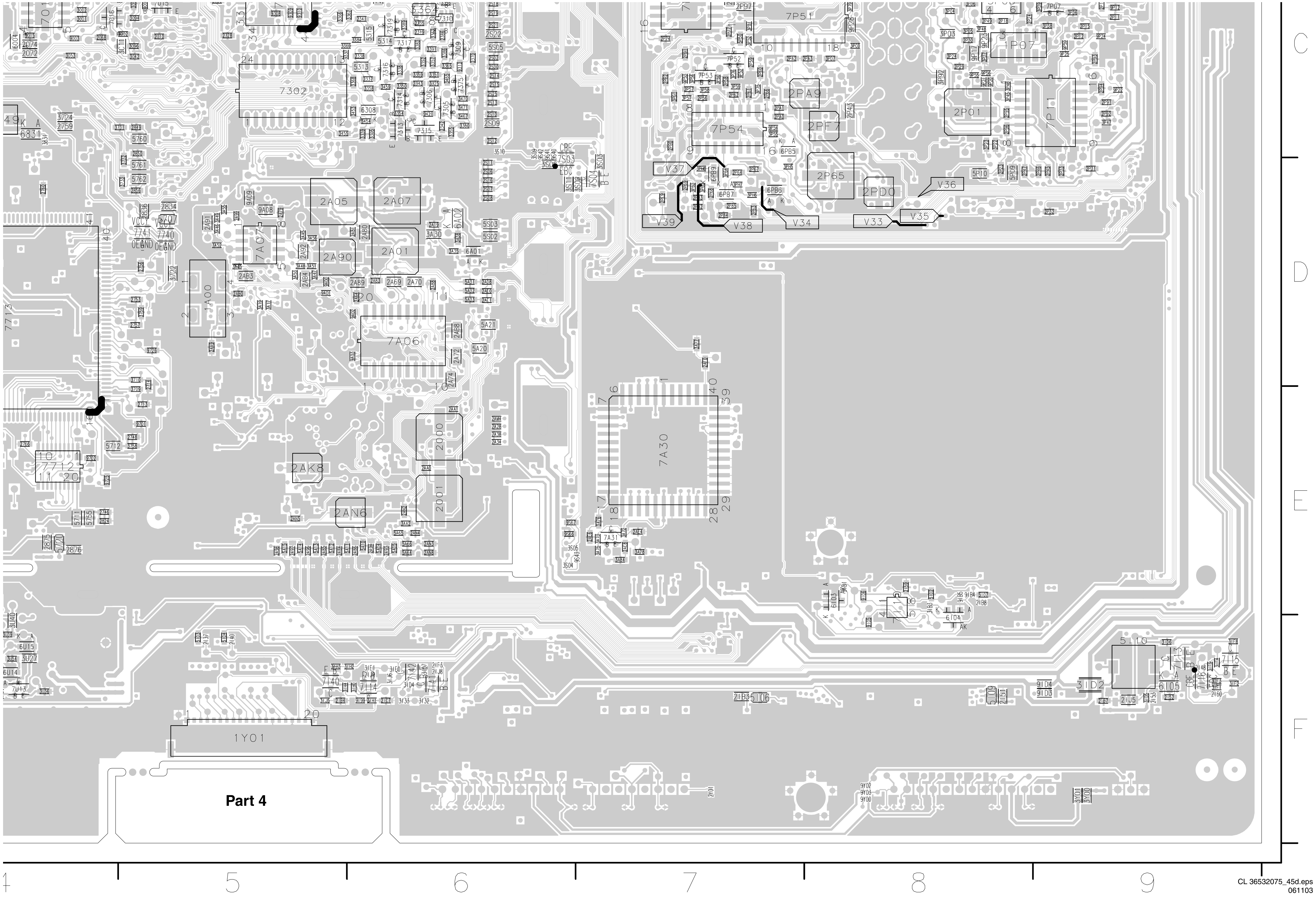
Layout Small Signal Panel (Bottom Side Part 4)


C
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E
F
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5
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Part 4
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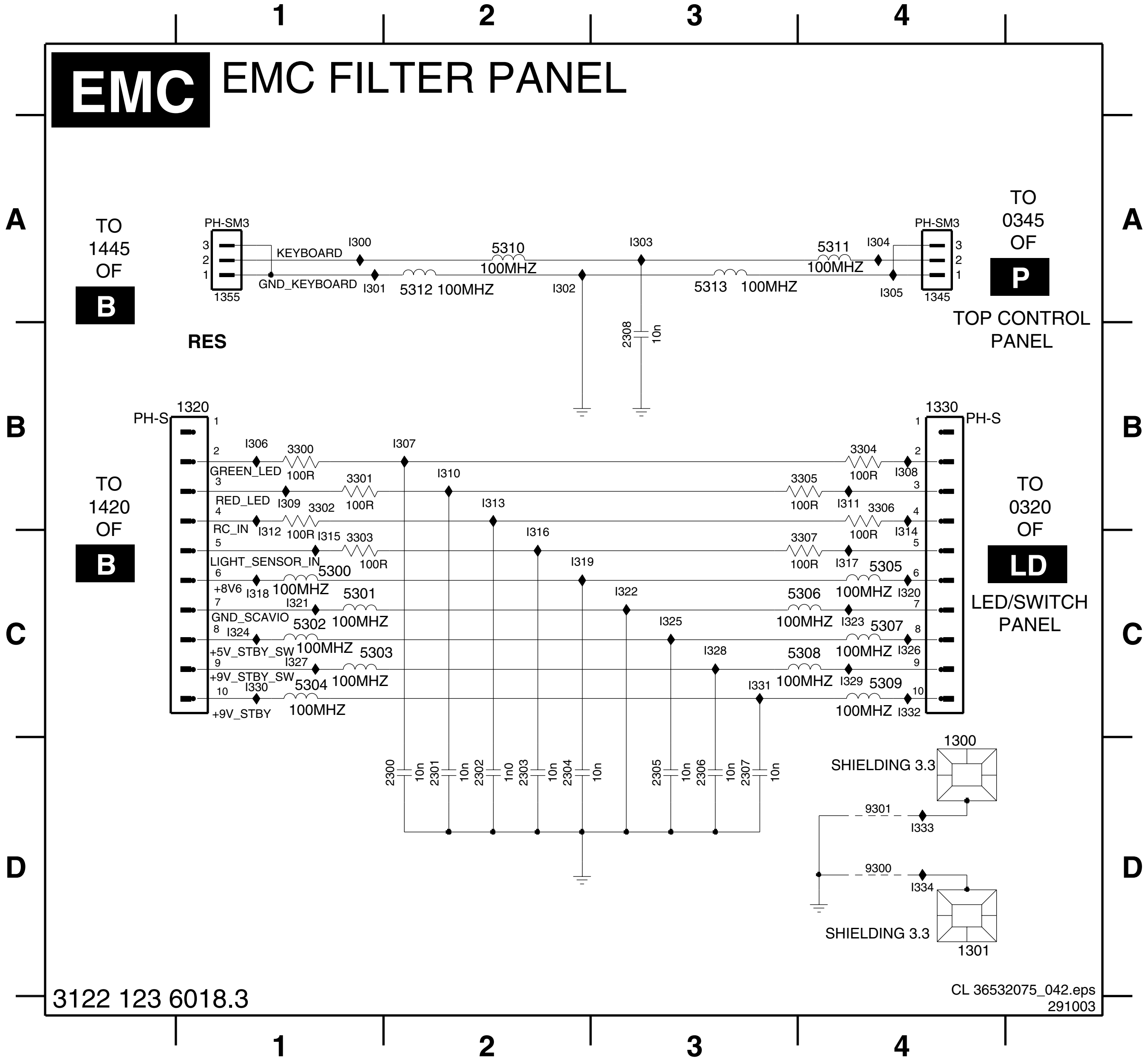
2A05
2A07
2A01
2A90
2000
2001
2AK8
2AN6
7712
7713
6831
7P51
7P54
1P07
7P11
2P01
2PA9
2PF7
2P65
2PD0
V33
V34
V35
V36
V37
V38
V39
5L10
6105
3ID2
6104

CL 36532075_45d.eps
061103

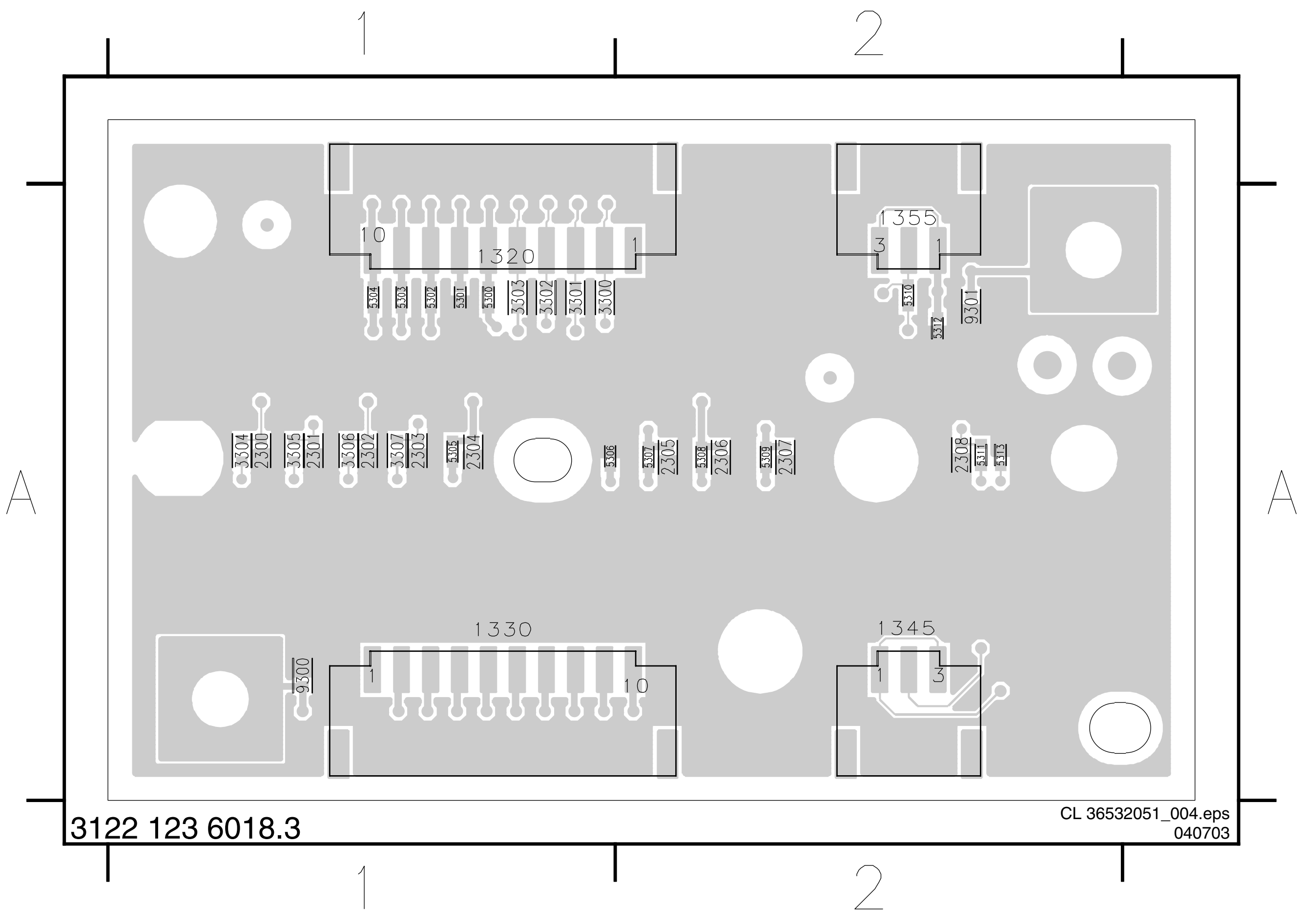
EMC Filter Panel

1300	D4
1301	D4
1320	B1
1330	B4
1345	A4
1355	A1
2300	D2
2301	D2
2302	D2
2303	D2
2304	D2
2305	D3
2306	D3
2307	D3
2308	A3
3300	B1
3301	B1
3302	B1
3303	C1
3304	B4
3305	B4
3306	B4
3307	C4
5300	C1
5301	C1
5302	C1
5303	C1
5304	C1
5305	C4
5306	C4
5307	C4
5308	C4
5309	C4
5310	A2
5311	A4
5312	A2
5313	A3
9300	D4
9301	D4
I300	A1
I301	A1
I302	A2
I303	A3
I304	A4
I305	A4
I306	B1
I307	B2
I308	B4
I309	B1
I310	B2
I311	B4
I312	C1
I313	B2
I314	C4
I315	C1
I316	C2
I317	C4
I318	C1
I319	C2
I320	C4
I321	C1
I322	C3
I323	C4
I324	C1
I325	C3
I326	C4
I327	C1
I328	C3
I329	C4
I330	C1
I331	C3
I332	C4
I333	D4
I334	D4

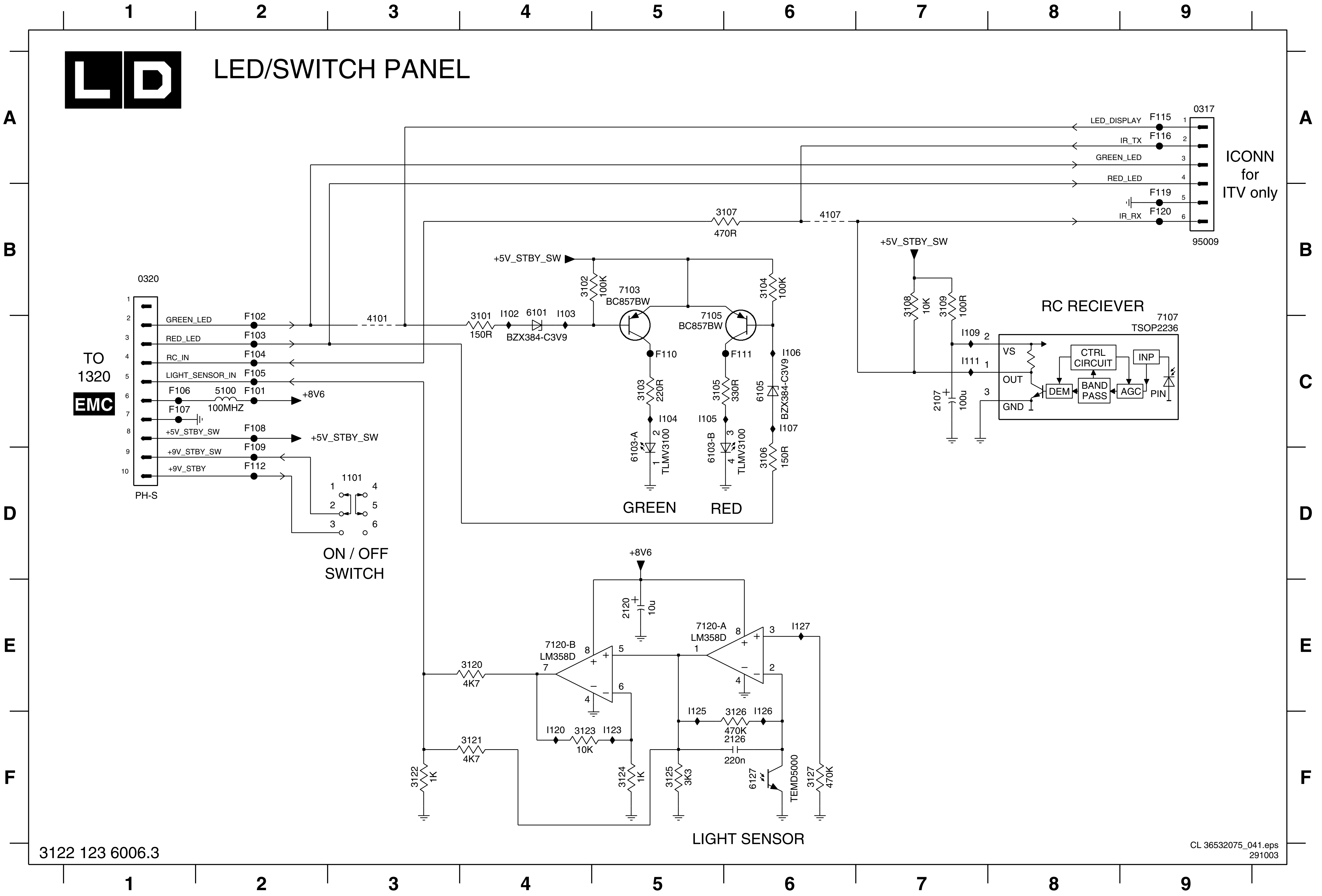

1
2
3
4
A
B
C
D
EMC
EMC FILTER PANEL
TO
1445
OF
B
RES
PH-SM3
1355
KEYBOARD
GND_KEYBOARD
I300
I301
5310
100MHZ
5312 100MHZ
I302
I303
2308
10n
5311
100MHZ
5313 100MHZ
I304
I305
PH-SM3
1345
TO
0345
OF
P
TOP CONTROL
PANEL
TO
1420
OF
B
PH-S
1320
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
+8V6
GND_SCAVIO
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
3300
3301
3302
3303
100R
5300
5301
5302
5303
5304
100MHZ
1330
PH-S
3304
3305
3306
3307
5305
5306
5307
5308
5309
TO
0320
OF
LD
LED/SWITCH
PANEL
2300
2301
2302
2303
2304
2305
2306
2307
10n
1n0
SHIELDING 3.3
1300
9301
I333
9300
I334
SHIELDING 3.3
1301
3122 123 6018.3
CL 36532075_042.eps
291003

Layout EMC Filter Panel

1320	A1
1330	A1
1345	A2
1355	A2
2300	A1
2301	A1
2302	A1
2303	A1
2304	A1
2305	A2
2306	A2
2307	A2
2308	A2
3300	A1
3301	A1
3302	A1
3303	A1
3304	A1
3305	A1
3306	A1
3307	A1
5300	A1
5301	A1
5302	A1
5303	A1
5304	A1
5305	A1
5306	A1
5307	A2
5308	A2
5309	A2
5310	A2
5311	A2
5312	A2
5313	A2
9300	A1
9301	A2

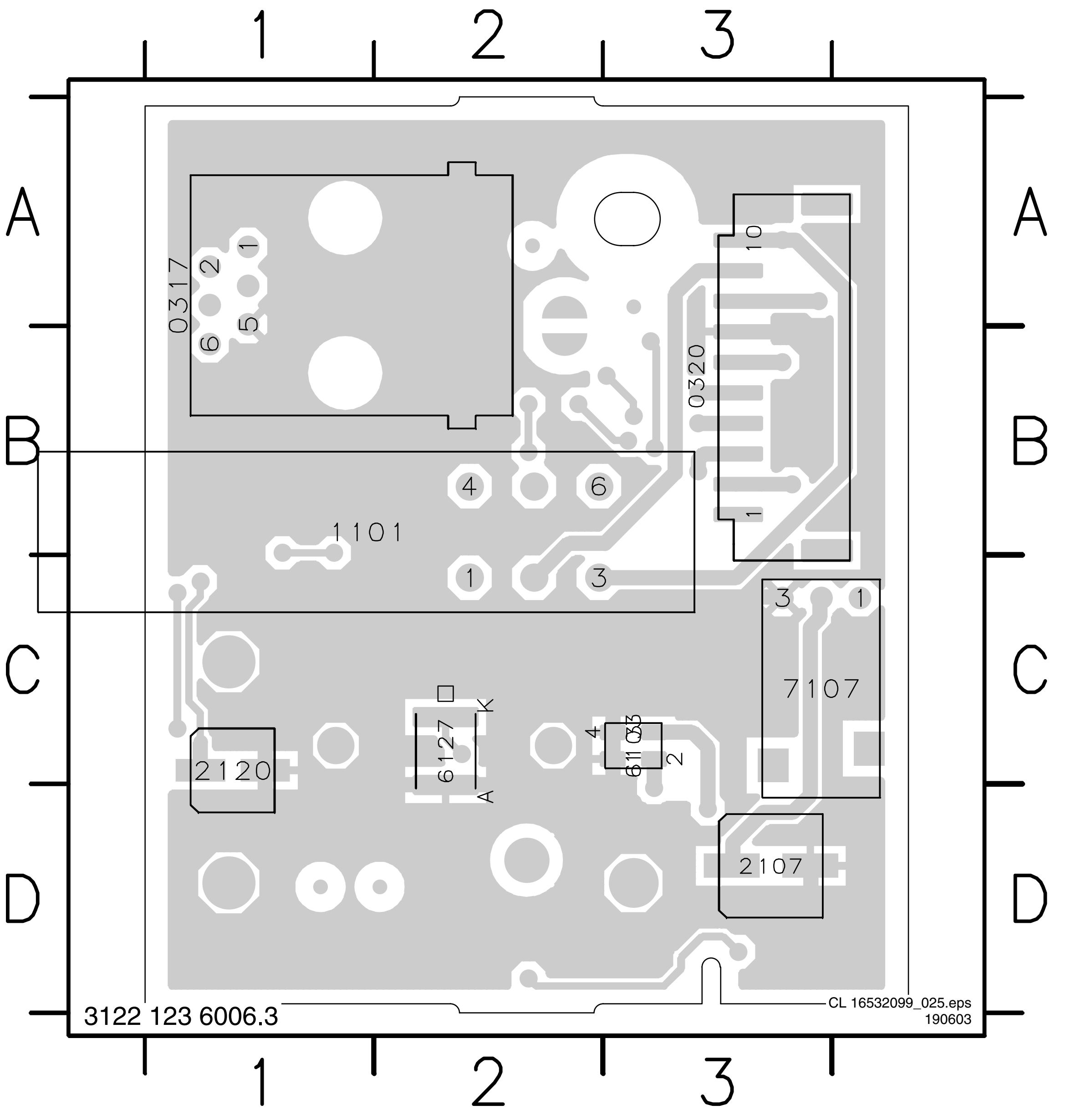

1
2
A
1320
10
1
1355
3
1
9301
3304
2300
3305
2301
3306
2302
3307
2303
2304
2305
2306
2307
2308
1330
1
10
1345
1
3
9300
3122 123 6018.3
CL 36532051_004.eps
040703

LED/Switch Panel


LD
LED/SWITCH PANEL
1 2 3 4 5 6 7 8 9
A B C D E F
0320
TO 1320
EMC
PH-S
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
F101 F102 F103 F104 F105 F106 F107 F108 F109 F112
5100 100MHZ
+8V6
+5V_STBY_SW
1101
ON / OFF SWITCH
4101
3101 150R
I102 6101 I103
BZX384-C3V9
3102 100K
7103 BC857BW
7105 BC857BW
3104 100K
F110 F111
3103 220R
3105 330R
6105 BZX384-C3V9
I104 I105 I106 I107
6103-A TLMV3100
6103-B TLMV3100
3106 150R
GREEN
RED
3107 470R
4107
0317
LED_DISPLAY
IR_TX
GREEN_LED
RED_LED
IR_RX
F115 F116 F119 F120
ICONN for ITV only
95009
+5V_STBY_SW
3108 10K
3109 100R
I109 I111
2107 100u
RC RECIEVER
7107 TSOP2236
VS OUT GND
CTRL CIRCUIT
INP
DEM
BAND PASS
AGC
PIN
+8V6
2120 10u
7120-B LM358D
7120-A LM358D
I127
3120 4K7
3121 4K7
I120 3123 10K I123
I125 3126 470K I126
2126 220n
3122 1K
3124 1K
3125 3K3
6127 TEMD5000
3127 470K
LIGHT SENSOR
3122 123 6006.3
CL 36532075_041.eps
291003

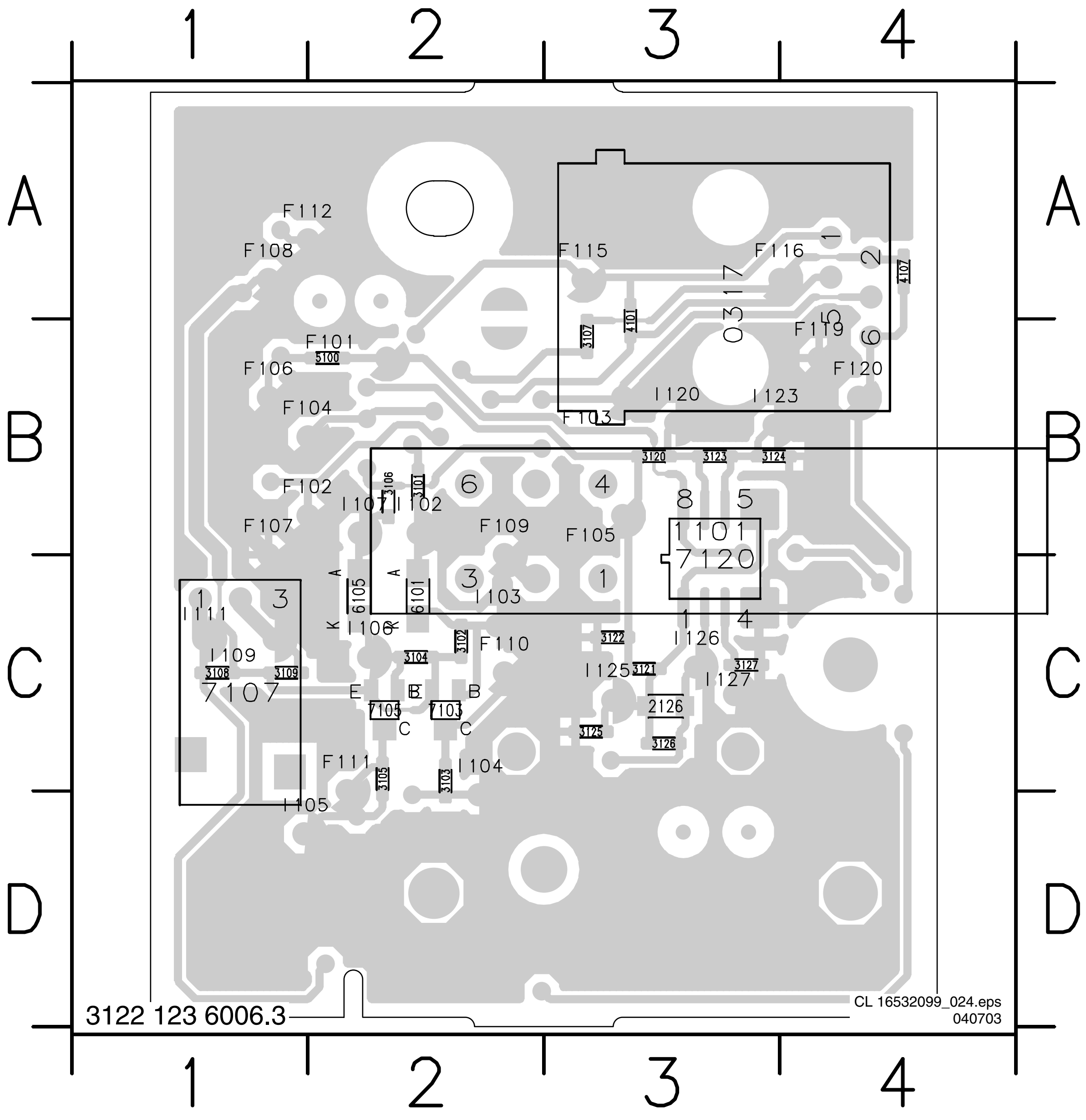
0317	A9
0320	B1
1101	D3
2107	C7
2120	E5
2126	F6
3100	C2
3101	C4
3102	B4
3103	C5
3104	B6
3105	C5
3106	D6
3107	B6
3108	B7
3109	B7
3120	E4
3121	F4
3122	F3
3123	F4
3124	F5
3125	F5
3126	F6
3127	F6
4101	C3
4107	B6
6101	C4
6103-A	C5
6103-B	D5
6105	C6
6127	F6
7103	B5
7105	B5
7107	C9
7120-A	E6
7120-B	E4
F101	C2
F102	C2
F103	C2
F104	C2
F105	C2
F106	C1
F107	C1
F108	C2
F109	D2
F110	C5
F111	C6
F112	D2
F115	A9
F116	A9
F119	B9
F120	B9
I102	B4
I103	B4
I104	C5
I105	C5
I106	C6
I107	C6
I109	C7
I111	C7
I120	F4
I123	F5
I125	E5
I126	E6
I127	E6

Layout LED/Switch Panel (Top Side)


1
2
3
A
B
C
D
0317
0320
1101
2120
6127
6103
7107
2107
3122 123 6006.3
CL 16532099_025.eps
190603

0317	A1
0320	B3
1101	B1
2107	D3
2120	C1
6103	C3
6127	C2
7107	C3

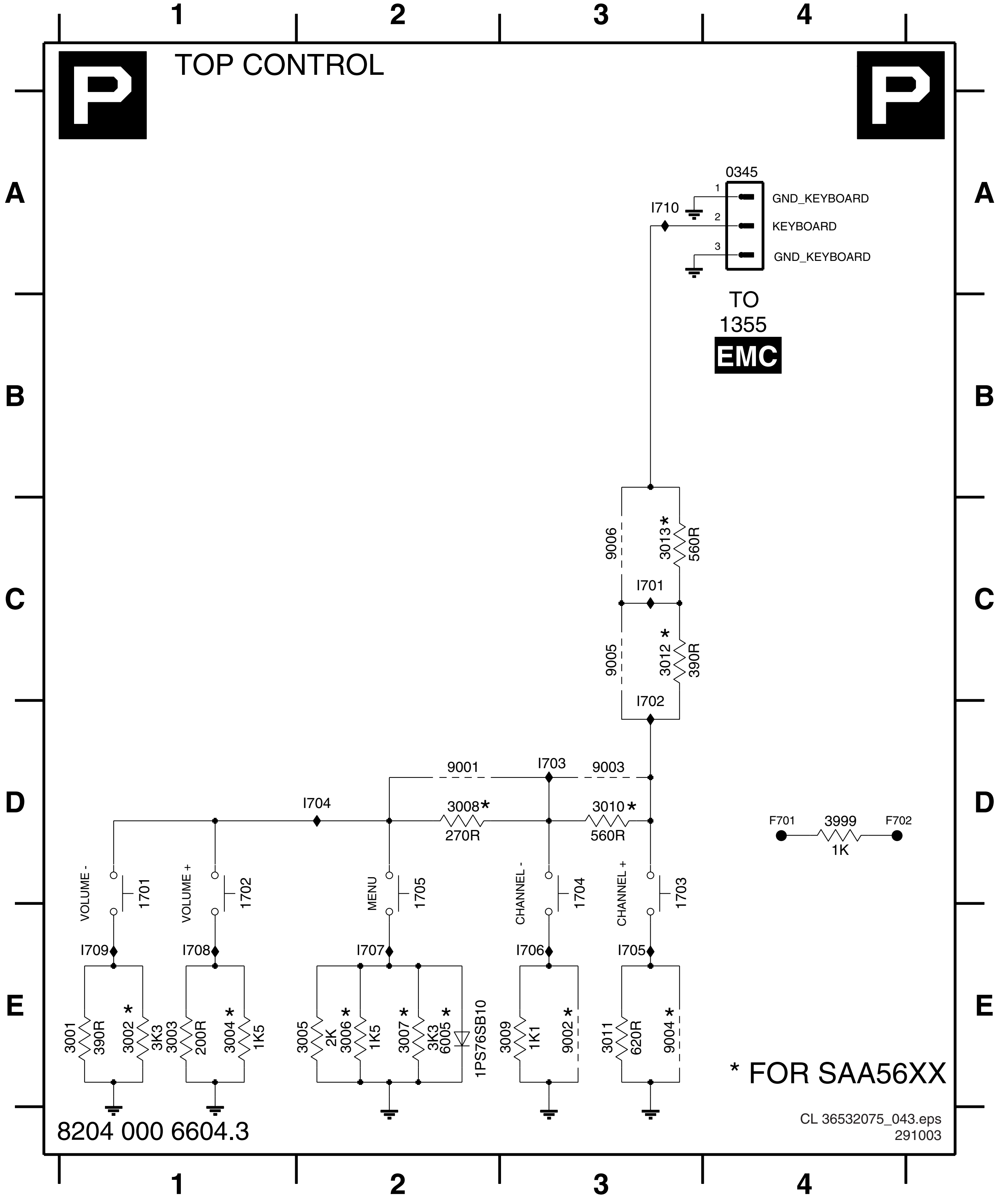
Layout LED/Switch Panel (Bottom Side)


1
2
3
4
A
B
C
D
0317
1101
7120
7107
2126
6105
6101
7105
7103
3122 123 6006.3
CL 16532099_024.eps
040703

0317	A4
1101	B3
2126	C3
3101	B2
3102	C2
3103	C2
3104	C2
3105	C2
3106	B2
3107	B3
3108	C1
3109	C1
3120	B3
3121	C3
3122	C3
3123	B3
3124	B3
3125	C3
3126	C3
3127	C3
4101	B3
4107	A4
5100	B2
6101	C2
6105	C2
7103	C2
7105	C2
7107	C1
7120	C3

Top Control

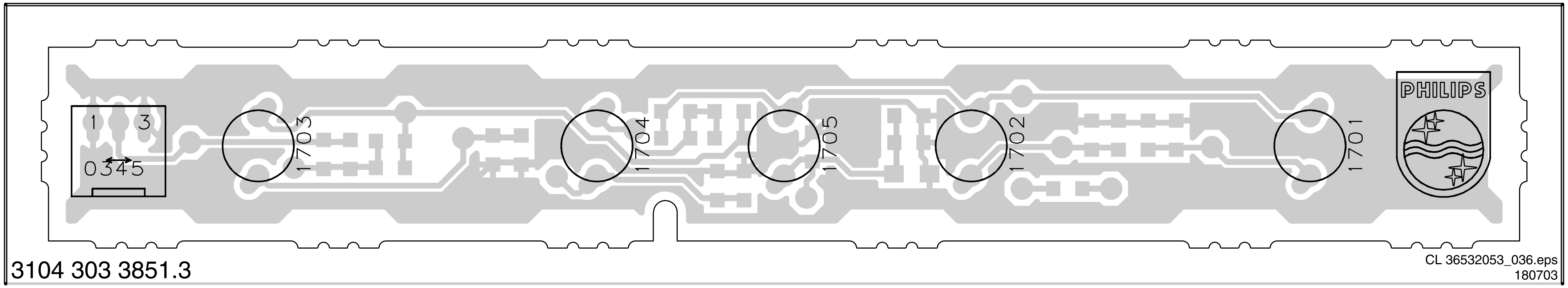
0345	A4	1704	D3	3003	E1	3007	E2	3011	E3	6005	E2	9004	E3	F702	D4	I704	D2	I708	E1
1701	D1	1705	D2	3004	E1	3008	D2	3012	C3	9001	D2	9005	C3	I701	C3	I705	E3	I709	E1
1702	D1	3001	E1	3005	E2	3009	E3	3013	C3	9002	E3	9006	C3	I702	D3	I706	E3	I710	A3
1703	D3	3002	E1	3006	E2	3010	D3	3999	D4	9003	D3	F701	D4	I703	D3	I707	E2		


1
2
3
4
A
B
C
D
E
P
TOP CONTROL
P
0345
1
2
3
GND_KEYBOARD
KEYBOARD
GND_KEYBOARD
I710
TO
1355
EMC
9006
3013 *
560R
I701
9005
3012 *
390R
I702
9001
I703
9003
I704
3008 *
270R
3010 *
560R
F701
3999
1K
F702
VOLUME -
1701
VOLUME +
1702
MENU
1705
CHANNEL -
1704
CHANNEL +
1703
I709
I708
I707
I706
I705
3001
390R
3002 *
3K3
3003
200R
3004 *
1K5
3005
2K
3006 *
1K5
3007 *
3K3
6005 *
1PS76SB10
3009
1K1
9002 *
3011
620R
9004 *
* FOR SAA56XX
8204 000 6604.3
CL 36532075_043.eps
291003

Personal Notes:

Layout Top Control Panel (Top Side)

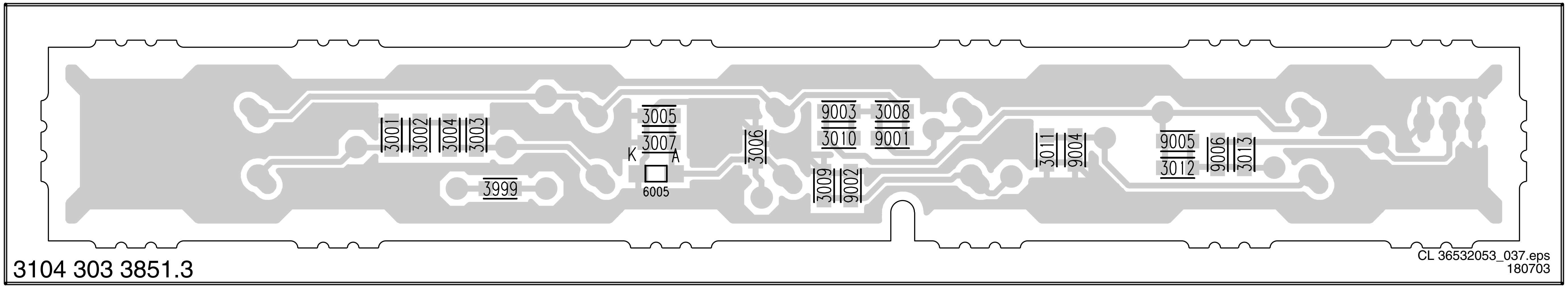
0345 1701 1702 1703 1704 1705


1
3
0345
1703
1704
1705
1702
1701
PHILIPS
3104 303 3851.3

CL 36532053_036.eps
180703

Layout Top Control Panel (Bottom Side)

3001 3002 3003 3004 3005 3006 3007 3008 3009 3010 3011 3012 3013 3999 6005 9001 9002 9003 9004 9005 9006


3001
3002
3004
3003
3999
3005
3007
K
A
6005
3006
9003
3010
3008
9001
3009
9002
3011
9004
9005
3012
9006
3013
3104 303 3851.3

CL 36532053_037.eps
180703